ANNE *R.*

WHEREAS Our Trusty and Well-beloved *John James* Gent. has humbly represented unto Us, that he has prepared for the Press, a Book entitled, *The Theory and Practice of* GARDENING; and has humbly besought Us to grant him Our Royal Privilege and Licence for the Sole Printing and Publishing thereof for the Term of Fourteen Years: We being willing to encourage so useful a Work, are graciously pleased to condescend to his Request; and do, by these Presents, grant to him the said *John James*, his Executors, Administrators, and Assigns, Our Royal Licence for the Sole Printing and Publishing the said Book entitled, *The Theory and Practice of* GARDENING, for and during the Term of Fourteen Years, from the Date hereof; strictly forbidding all Our Subjects within Our Kingdoms and Dominions, to reprint the same, either in Whole or in Part, or to import, buy, vend, utter, or distribute any Copies thereof reprinted beyond Sea, during the said Term of Fourteen Years, without the Consent and Approbation of the said *John James*, his Heirs, Executors, Administrators, and Assigns, under his or their Hands and Seals first had and obtained, as they will answer the contrary at their Peril. Whereof the Masters, Wardens, and Company of *Stationers* are to take Notice, that the same may be enter'd in their Register, and that due Obedience be render'd thereunto. *Given at Our Castle of* Windsor, *the* 22*th Day of* September, 1712, *and in the Eleventh Year of Our Reign.*

By Her Majesty's Command,

DARTMOUTH.

THE *THEORY* and *PRACTICE* OF GARDENING:

Wherein is fully handled

All that relates to Fine GARDENS,

COMMONLY CALLED

PLEASURE-GARDENS,

As PARTERRES, GROVES, BOWLING-GREENS, *&c.*

CONTAINING

Divers PLANS, and general Dispositions of GARDENS; new Designs of Parterres, Groves, Grass-Plots, Mazes, Banqueting-Rooms, Galleries, Portico's, and Summer-Houses of Arbor-Work; Terrasses, Stairs, Fountains, Cascades, and the like Ornaments, of Use in the Decoration and Embellishment of GARDENS.

WITH

The Manner of laying out the Ground, cutting the Terrasses, and of Drawing and Executing all sorts of Designs, according to the Principles of GEOMETRY.

THE

Method of Planting, and Raising, in little time, all the PLANTS requisite in Fine GARDENS.

ALSO

That of discovering Water, conveying it into Gardens, and of making Basons and Fountains for the same.

TOGETHER WITH

Remarks and general Rules in all that concerns the ART of GARDENING.

Done from the French *Original, printed at* Paris, Anno 1709.

By JOHN JAMES of *Greenwich.*

LONDON:

Printed by GEO. JAMES, and sold by MAURICE ATKINS at the *Golden-Ball* in S. *Paul's* Church-Yard.

MDCCXII.

To the HONOURABLE

JAMES JOHNSTON,

OF

TWICKENHAM

IN THE

County of *Middlesex*, Esq;

SIR,

I Should have thought myself happy, had it been the only Business of this Epistle, to have returned You Thanks for the Encouragement You gave this Work, by getting so great a Number of Subscriptions to it from both Houses of Parliament; and although I could easily exceed the Limits of it, in a bare Recital of the many Good-Offices You have done me, yet such is my Misfortune,

 that

that instead of making any Acknowledgments of Your former Kindnesses, I am under the Necessity of asking farther Favours.

The unexpected Delay this Book has met with, has justly given Offence to You, and many of the Subscribers; but I hope the Accuracy of the Engraving, the Goodness of the Paper, and the Beauty of the Letter and Workmanship, which even exceed the Original, will in some measure atone for this Fault, especially since the Graving of the Plates was retarded no less than four Months, by the Indisposition of the Engraver, at a time he had made such Progress, that they could not then be put into other Hands without manifest Injury to the Work, besides divers other Accidents that contributed likewise to delay the Publishing, which with the utmost Diligence I was not able to prevent.

Notwithstanding this, I think it my Duty to ask Pardon of all the Subscribers, which I earnestly do, and promise to make what Amends I am able, by keeping the Book to such a Price as may be just to those that were pleased to encourage it, and yet be as cheap to Others, as any thing of like Goodness, that has appeared in the English *Tongue.*

As to the Translation, Sir, I have endeavoured to make it as plain, and intelligible, as possible, which the Author had done before me in the Original, well knowing a Gentleman has as much need that an Art be made plain to him, as a Workman has that the Language should be so. I know it has been objected, that this Undertaking was properly the Gardeners Province, and

I free-

I freely own it; but ſince I could not find any of that Profeſſion had ſuch a Taſte of the Performance, as was like to produce a Publication of it in Engliſh, *I reſolved to attempt it, upon the Knowledge I had of Your good Opinion of the Original, and the noble Guſto that appeared in all the Deſigns of the Book.*

Deſigns that ſo far outdo all that has hitherto been publiſhed in Books of Gardening, that if the Precepts keep equal pace with them, as 'tis likely they do, we may hope to ſee, ere long, our Engliſh *Pleaſure-Gardens in greater Perfection, than any the moſt renowned, in* France, *or* Italy, *ſince our Woods and Groves, our Graſs and Gravel, which are the great Subjects of this Work, are allowed to ſurpaſs in Verdure and natural Beauty, whatever is to be found in thoſe Countries.*

Whether the Author himſelf were a Gardener by Profeſſion, is a Queſtion of no great Importance to be determined: 'Tis probable he was not, as well for that he has affected to be Anonymous, as that his Terms of Art ſeem to ſavour much of the Architect, whom he introduces in two or three Places as One chiefly concern'd in giving the Deſign of a Garden. Many of theſe Terms are ſuch, as we have no Words appropriate to in the Engliſh, *nor indeed have we in uſe ſeveral of the Things they ſignify, eſpecially in what relates to Water-works,* &c. *For which Reaſon I have generally ſet them in the Margin with ſuch Explanations as are taken from the Authority of other* French *Writers.*

DEDICATION.

I might now very justly attempt an Apology for prefixing Your Name to so mean a Piece of English, *but having rather endeavoured faithfully to deliver the Author's Meaning, than to make the Style florid; and the Plates themselves containing all that is truly noble in the Subject of Gardening; I hope you'll be pleased to pardon the Defects of the Version, and the Presumption of this Address from,*

SIR,

Your most Faithful, and

most Obedient Servant,

JOHN JAMES.

The NAMES *of the* Subſcribers *to this* BOOK.

A.

THE Duke of *Athol*
The Marq. of *Anandal*
The Earl of *Angleſey*
The Earl of *Arran*
John Lord *Aſhburnham*
Joſeph Addiſon Eſq;
John Aiſlabie Eſq;
Francis Anneſley Eſq;
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Mr. *Warner* Goldſmith
Major-General *Wynn*

Y.

George Yeaman Eſq;

ERRATA.

PAG. 38. Lin. 13. for *Rib* read *Bib.* P. 44. L. 4. of the Marginal Note, read *Quich-graſs.* P. 46. L. 8. read *Bevelings.* P. 54. L. 8. read *the* great Walk. P. 54. L. 12. read *in* Cants. P. 55. L. 7. read has Twelve *Walks.* P. 55. L. *ult.* of the Marginal Note read *Figure.*

ERRATA.

Page	*Line*		
20	31	*Read*	Designs and Parts detached.
31	11		Cut by Grills.
64	36		Broke up a good Spit deep.
78	12		Lay a Colour in Oyl.
80	7		Works.
91	5		Parallel to the Line *C D*.
101	35		Extremity *A*.
108	15		Little a Way.
111	5		All the other.
114	7		Length of the Hill.
115	18		Having deliver'd.
121	7		From *A* to *D*.
Ibid.			Against 3d Practice, *insert* FIG. VII.
130	23		Turn yourself about.
132	31		Are the Three Principal.
136	33		Above the Superficies.
140	38		Which wastes all about them.
153	*Margin*		Woods at *Ruel*.
156	17		Second Year they are planted.
157	30		With their Clod of Earth.
162	1		So that they are.
163	8		Take Root in.
167	5		Too much Opposition.
179	31		Draw them conveniently.
187	27		Holding up your Head.
193	10		In the Pipes.
198	26		Diameter of Water-Pipes.
204	5		Upon the Fall.
Ibid.	10		Watering-Pots into.
210	30		Strength of Arm.
213	24		Pozzolana.
214	2		The Bottom or Superficies.
217	14		In the Length of which.

PART I.

Which contains the

THEORY OF GARDENING.

CHAP. I.

Serving as an ADVERTISEMENT.

UPON examining moſt Authors who have written of Agriculture and Gardening, I found none of them had enlarged upon the Subject I determined to treat of. This, at firſt, had almoſt diſcouraged me from an Undertaking, in which I could hope for no Aſſiſtance from others, it being eaſy to go wrong where no-body has beaten the Way. As I may, then, without Vanity, ſay, this Work has ſomething New in it, I hope, the Reader will more readily excuſe the Faults that ſhall be found in it: Some more able Hand may poſſibly come after, and give the finiſhing Stroke to that which I propoſe but a Sketch of.

MY Deſign being to write of Gardens, which may properly be called Pleaſure-Gardens; that is to ſay, thoſe that we take care to keep with the greateſt Delicacy and Neatneſs,

as Parterres, Groves, and Grass-Plots, set off with Portico's, and Cabinets of Arbour-work, Figures, Fountains, Cascades, *&c.* I have neglected nothing for my Information in this Point. I have read a great many *Latin*, *Italian*, *French*, and *Spanish* Authors on the Subject of Gardening; the Reading of whom, tho' good in itself, has, however, been of no great Service to me in this Case. Among the *French*, we have but two or three Authors that have spoke of fine Gardens, and they have done no more than lightly touch'd upon them; besides that the Designs they give at the End of their Books are of very mean Gusto, and such as are now quite out of Use. Other Writers of Agriculture have thought this Matter unworthy of their Pen: Some speaking of the pruning of Fruit-Trees; of the Culture of Kitchen-Gardens; of Botanicks, and the Nature of Simples; of Flower-Gardens, Orange-Trees, *&c.* Others of Tillage, and Manuring of Ground; of the Duty of a good Housholder, Farmer, and Husbandman; of the Vineyard and Vintage; of Fishing and Hunting; of Cookery, and making all Sorts of Sweetmeats; in all which may be seen the Difference between this Work and theirs.

Boiceau, Molet.

La Quintinye. Le Jardinier Francois. L. Liger. Le Jardinier Solitaire. Le Jardinier Botaniste. J. de Tournefort. Le Jardinier Fleuriste. Liebaut. De Serres.

THE great Love I always had for Agriculture and Gardening; the Abode I made at *Paris* and *Versailles*, whose Neighbouring Parts contain so many Wonders of this Nature; the Satisfaction I found in surveying all those Beauties; and the Pains I have taken in planting several fine Gardens; induced me to make proper Remarks from time to time. Nature, that I have so often consulted; Proofs of Soil; long Experience; and the Conversation of the most Able in the Profession; may be allowed to have given me some Light in this Affair; and the considerable Mistakes and unnecessary Expence I have observ'd in many Gardens, join'd with the Ignorance of most Gardeners, made me, at length, resolve to communicate my Observations to the Publick.

I CANNOT but admire, that among so many as have written of Fruit and Kitchen-Gardens, there should be none hitherto, that have spoken fully of Pleasure-Gardens, which, without Controversy, are the most beautiful and most noble of all others; notwithstanding what a late Author has said, who

La Quintinye.

who ſtrives to give the former the Preference. Indeed, nothing can be more pleaſant and agreeable, than a handſome Garden, rightly diſpoſed, and well kept; no Proſpect yields more Delight to the Eye, or gives greater Satisfaction to Perſons of a good Taſte.

'TIS not my Deſign, to condemn Fruit and Kitchen-Gardens; they are valuable in their Place, and, I agree, are as neceſſary to make up a complete Garden, as the fineſt Groves and Parterres: We have Inſtances of this, in the moſt magnificent Gardens that are, where the former are as curious in their Kind, as the latter. Nevertheleſs, all theſe Kitchen and Fruit-Gardens, how fine ſoever, are conſtantly ſet in By-places, diſtinct from the other Gardens; an evident Proof, that they are rather accounted neceſſary for the Service of the Houſe, than deſigned to improve the Beauty and Magnificence. Theſe are Things ſhould be ſought after, if one would ſee them, and ought never to preſent themſelves firſt to Sight in a handſome Garden.

Verſailles, S. Cloud, Meudon, Sceaux, Chantilly, *&c.*

I AM very ſenſible, every one will not join with me in this Opinion; eſpecially thoſe, who have written of Fruit, and ſuch as are great Lovers of it: Theſe make the Perfection of the Art of Gardening, and the whole Beauty of a Garden, to conſiſt in a Kitchen-Ground, a Fruit-Garden planted in * *Quincunce*, and in long Eſpaliers, for the Satisfaction of gathering from them a Pear or Peach. 'Tis to this they confine and limit their utmoſt Deſires in the Buſineſs of Gardening; and as for Parterres, Groves, and the like, they have no manner of Eſteem for them.

* Quincunce *in its original Signification, was a Plantation of Trees, like the Cinque Points of a Die repeated; but is now uſed to denote a Plantation where the Trees that made the middle Points are left out, and the others form a perfect Square, and are ſo repeated throughout.*

THESE Men conceit, that becauſe they can prune a Fruit-Tree, and make a Kitchen-Bed, they are perfectly skill'd too in what relates to Pleaſure-Gardens, whoſe Diſpoſition and Culture are very different from the other.

I DO not ſuppoſe this Work can be of any great Service to ſuch Perſons; they are wholly ignorant of the Beauties it treats of, and Intereſt with them is above all other Conſiderations: They would rather have a Garden, like a plain Field, ſtock'd with Apple-Trees, Cherry-Trees, *&c.* or, like a Marſh, fill'd with Kitchen-Garden Stuff, than enjoy that which is truly beautiful and magnificent. This Spirit

of Interest, by good Fortune, is not general, nor to be charged upon Persons of greater and more elevated Minds; for whose Sake, partly, I profess to have written, to further their noble Intentions, and to make way for their good Taste to shew itself in Publick. I flatter myself, this Treatise may be of use to such, and may conduct them aright in the planting of a handsome Garden. This at least I am sure of, That such a Garden, as I propose in the following Chapters, shall do a Private Man more Credit, than the finest Fruit and Kitchen-Gardens in the World; which, in truth, seem to argue, that their Master has more regard to his Profit, than to any other Consideration.

SUPPOSING, then, that a Private Person, wealthy, and curious in the Art of Gardening, would be at the necessary Expence of planting a handsome Garden; I lead him, Step by Step, from the Choice he ought to make of a good Soil, to the Execution and highest Perfection of his Garden, instructing him in whatever he ought to know, that he be not impos'd upon by the Country-men and Artificers he shall have occasion to employ.

I SHEW him the way to know good Plants, and to set and raise them in little Time: I instruct him to make Basons, and Fountains with Water-spouts, to convey Water into his Gardens; to dispose the Terrasses, Stairs, *&c.* and, above all, to form a right Taste of what concerns the general Dispositions of Gardens, and the Designs of Parterres, Grass-Plots, Groves, Arbour-work, Cascades, and other suitable Ornaments; which may be learnt from the 25 Plates inserted in this Volume.

I PURPOSE likewise to give this Gentleman so full Instructions in the Business of Gardening, that he may be able of himself to make his Ground, and to lay out and trace his Garden with his Domesticks, without being obliged to have recourse to Tradesmen. But to this end, he must be a Lover of the Country, and of Agriculture; a Knowledge so agreeable, and always so much esteem'd by Persons of the greatest Quality, that many Princes have not disdain'd, after the Fatigues of War, to apply themselves to it; and the Ancients, especially, held it in very great Reputation.

Lewis XIII. Lewis XIV. The late Duke of Orleans.

Imperatorum olim manibus colebantur agri, &c. Plin. Hist. L. 18. c. 3.

BUT,

BUT, supposing Business, or some Publick Employment, should not permit our Gentleman to apply himself to plant and raise his own Garden, the Perusal of this Work cannot, however, but be of great Use to him; he may be assured, that in following the Precepts it contains, he will not be liable to be imposed upon, when he is to deal with his Workmen about any thing he designs to execute. The Gardener will be better kept to his Duty, who knows his Master is no Stranger to his Art; whereas, when these Men have a Master ignorant and unacquainted even with the Terms of Gardening, they make no Scruple to put upon him, but will pretend to take him up, and sometimes to laugh at his Demands. Add to this, that a Garden is always better for being under the Eye of a Master that has some Skill in it himself.

Infelix ager cujus dominus villicum audit, non docet. Columella, lib. 2.

NOW, tho' what I here propose for the Instruction of a Private Gentleman, be Part of my Design; yet I reckon this Work will be no less serviceable to Gardeners and Countrymen; who, for the most part, are got into a bad Way, and have but a very ill Taste in Designs of Gardening: This Treatise will likewise serve for a complete Instruction to young Gardeners, to confirm those that are not altogether Novices, in what good Things they know, and to illustrate, and give Light to many other Matters.

'TIS on this Account I have been induced to write for every one, and to make use of a plain and homely Style, suitable to the Subject and the Capacity of Gardeners, according to that Precept of *Horace*,

Ornari res ipsa negat, contenta doceri.

I HAVE but one Word more to say, and that concerns the Division of this Treatise, whose Titles are to be found in the foregoing Table of Chapters.

THIS Work is divided into Two Parts, which contain, in all, Eighteen Chapters.

IN the First Part, is taught all the *Theory of Gardening*, it being necessary, as every one knows, to learn the Theory before the Practice, which is no more than the Sequel and Execution of the Consequences and Certainties drawn from the former. This Theory is fill'd with general Rules concerning

cerning the Meaſures and Proportions of the Parts of a Garden, and ſupported by Examples and well-contriv'd Deſigns, which take in all that is delicate, and of good Taſte in the Art of Gardening. Theſe Deſigns, for the better underſtanding of them, are explain'd by ſhort particular Deſcriptions; and this is what is to be found in the Eight firſt Chapters.

THE Second Part teaches the *Practice of Gardening*, which is of moſt Conſequence to be known, and that too which has not hitherto been communicated to the Publick; as the Manner of making, or laying out a Piece of Ground, whether level, gently riſing, or in Terraſſes; and of tracing out, and putting in Execution, the moſt difficult Deſigns; all demonſtrated by Figures, and the Principles of Geometry, and made out by a great Number of Experiments and Practices in Matters of Fact. This is included in the Four firſt Chapters. The Four next following contain the Method of Planting, and Raiſing in ſhort time all the Plants proper for a Pleaſure-Garden. The Two laſt Chapters deliver the Manner of ſearching out Water, conveying it into Gardens, and of making Baſons, Fountains, and Caſcades, to receive it.

IT may be truly averr'd, that Nothing but ſuch a Treatiſe as this was wanting, to perfect what relates to Agriculture and Gardening: Fruits, Legumes, Flowers, and the Tillage and Manuring of Land, have been diſcourſed of ſo often, and ſo well, that Nothing more needs to be ſaid of them. There was none, ſave the noble Pleaſure-Garden, but had been ſufficiently ſpoken of before: And in joining all theſe Tracts together, a Man cannot fail of Inſtructions that will enable him to form a Garden perfectly complete in all its Parts.

CHAP. II.

Of the Situation of the Ground, and of the Choice one ought to make thereof.

THE first Thing, and the most essential to be observed in chusing a Place to plant a Garden in, is the Situation and Exposition of the Ground. 'Tis on this the Success of the Undertaking principally depends; if we have the Prudence to make a good Choice, the Trees we plant will become beautiful and tall in little Time; but if we fail in this Point, all the Care and Expence we can bestow will signify little or nothing.

'TIS next to impossible to produce a fine Garden in a bad Soil; and tho' there are Ways to meliorate Ground, they are always very expensive; and it often happens, that a whole Garden is ruin'd, when the Roots of Trees have reach'd the Natural Bottom, whatsoever it has cost to lay good Earth of three Foot deep over the whole Surface.

THIS Situation is of so great Consequence, that all Authors, who have hitherto said any thing of Agriculture, have constantly and earnestly recommended the Necessity of making a good Choice thereof. I shall not take upon me here to quote those Authors, tho' possibly I have read most of them, but rather content myself to mention what * *Vitruvius* says, speaking of the Situation of Country-Houses: He tells us, „ That in the Situation of a Country-House, Re„ spect should be had to the Region of the Air, to the Cli„ mate, and to the Convenieney of the Place; that the „ Place should be easily accessible, fertile, plenteous in it„ self, and adjoining to Rivers and Ports, capable of ser„ ving it with all the Commodities of the Neighbouring „ Parts: That above all, it should be healthful, not situate „ in a low and marshy Ground, because of the Corruption „ caused

* *A famous Architect in the Time of* Augustus. L. 7. C. 1.

Things required in a good Situation.

„ caused by the infectious Breath of venomous Animals „ which breed there, and occasion many noxious Humours „ and Distempers: That, on the other hand, the Situation be „ not too high and mountainous, lest it be subject to Fogs „ and Storms of Wind, which destroy and tear up all be- „ fore them: And lastly, that the House be not turn'd to „ the South, or West, because Heat weakens the Body, and „ Cold strengthens it. In another Place, he says, That to „ seat a Country-House well, it should be consider'd, in „ the first Place, what Exposition is most wholesome, and „ let the House be turn'd that Way.

L. 7. C. 9.

Vitandum est autem quod plerique fecerunt aquæ causa, villas in infimis vallibus mergere, & paucorum dierum voluptatem præferre habitatorum saluti. Palladius de re rustica, lib. 1. tit. 16.

INDEED, this Point requires our utmost Circumspection; for, how vexatious would it be, to build a Country-House, and to plant a Garden, in a Place one cannot inhabit above four Months in the Year, without endangering one's Health, as very many are? Let us endeavour, then, as much as possible, to avoid this Defect, and consider what Conditions are necessary to a good Situation.

OF these I find Five considerable; the First, a wholesome Exposition; the Second, a good Earth; the Third, Water; the Fourth, a Prospect of a fine Country; and the Fifth, the natural Conveniency of the Place.

THE First, a wholesome Exposition, or Situation, is, when the Place is neither too high nor too low; not too high, which would very much expose the Gardens to the Winds, which are very injurious to Trees; nor too low, because the Dampness of low and marshy Places causes abundance of Humours, Defluxions, and other Maladies; beside the ill Air one breathes, proceeding from Toads, Snakes, Adders, and other venomous Creatures, which breed in Ponds and marshy Waters.

Palus omnimodo vitanda est, quia siccari consuevit æstate, & propter pestilentiam vel animalia hortis inimica quæ generat. Columella, lib. 2.

THIS should induce us to avoid Situations that are either mountainous, or in Bottoms and Valleys. There are Two other Sorts infinitely better than either of them, that, indeed, deserve the Name of happy Situations, and these are upon the Hill-side, or on the Flat.

THE Situation on a Rising Ground is most courted, and has the greatest Advantages, provided it be not too steep, but the Slope easy and imperceptible, where one may enjoy

The French call it vulgarly the Micote.

joy a great deal of Level, and a good Quantity of Water; for if the Descent be too quick, as in a Garden planted on the Declivity of a Mountain, one shall often have the Dissatisfaction to see the Trees torn up and carried off by the Torrents and Floods of Water, the Earth above tumbled on that below, the Walks all spoil'd, and the Walls thrown down; in a word, there is no keeping a Garden neat, and in good Order, whilst it is subject to so many Accidents: Whereas, where the Declivity is easy, and insensible; and, especially, where it abounds in Springs, you'll find the most wholesome and most agreeable Situation that can be; being shelter'd, by the Top of the Hill, from the Fury of the Winds, and the violent Heats of the Sun, you possess a temperate Air; the Water that comes down from the upper Part of the Hill, makes Fountains, Canals, and, if you please, Cascades, for the Ornament of your Garden. The same Waters having done this Office, find their natural Course into the Valleys, and render the Place extremely wholesome too, when they do not stagnate, or lodge on it; which is to be understood as well of Rain as Spring-Water.

Felix horti positio est, cui leniter inclinata planities, minimus cursus aquæ fluentis per spatia discreta derivat. Palladius de Re rustica, lib. 1. tit. 33.

Boyceau's *Treatise of Gardening*, lib. 1. p. 29.

La Quintinye, Tom. 1. pag. 165.

THE Situation on the Plain, or Flat, has likewise its Advantages; even its Surface is less tiresome to walk on, and not so chargeable to keep, as that on the Hill-Side: Terrass-Walls, Slopes, and Steps, being no way necessary here. The Floods and great Rains make no Spoil in this, which is a Point very considerable in a Garden. On the Flat, one enjoys a fine natural Level, and an Air even more pure than upon the Hill-Side: Vast Campains intersected by Rivers, Ponds, and Brooks, fine Meadows, and Hills covered with Buildings, or Wood, continually present themselves to Sight, and form so natural and agreeable a Perspective, that we can never set too high a Value on it; besides the Pleasure of Fishing it affords us, and the Conveniency of Water-Carriage of whatever we stand in need of.

THE Generality of Men are pretty much divided upon this Choice; some like the Hill-Side best; others preferring the Plain. I therefore leave the Reader to determine this Point himself, having recounted to him the several Advantages of one and the other Situation. I shall only add, in

 this

this Place, what the Ancients used to do (as divers Authors relate) to know if a Place were healthful: They were wont to judge of the Quality of the Air, of the Water, and of the Fruits of a Country, by the Constitution of the Bodies of such Beasts as were fed there, whose Entrails they examined; and when they found them wasted and corrupted, they from thence conjectur'd, that those of Men would become so likewise, should they inhabit the same Places.

'TIS not improper to mention here, that in the Business of Gardening, we reckon Four different Expositions of the Sun; that of the East, West, North, and South.

Four different Expositions of the Sun.

THE Eastern Exposition is that where the Sun shines from Morning to Noon.

THE Western is that on which the Sun darts its Rays from Noon to Evening.

THE Exposition to the North is that where the Sun shews itself the least; for it appears no more than about two Hours in the Morning, and as many in the Evening, and is the worst Exposition of all. 'Tis directly opposite to that of the South, where the Sun shines hottest the whole length of the Day; which makes it esteem'd the best of the Four, and the most proper of all others for Gardens.

I RETURN to the second Condition required, which is a good Earth or Soil, that is to say, Ground in its own Nature rich and fruitful. It will not suffice to have found an Exposition healthful, turned to the South, and possessed of all those Advantages I have already mentioned, if it be not accompanied with a good Body of Earth, and a Soil fertile in itself: For, without this, 'tis to be feared, all that is planted will, in a while, droop and die away: To prevent which, the greatest Care imaginable should be taken according to the following Instructions.

TO know if the Body of Earth be good, you must distinguish first, whether it be an old decayed Garden to be restored, or a new Place you design to pitch upon. If it be only an old Garden you intend to replant and new furnish, the Earth should be dug in those Places where you design any new Work, whether Parterre, Grove, Bowling-Green, or the like; and if the Ground there be found not good,

good, or be already worn out and exhausted, it must then be dug three Foot deep throughout, the bad Earth must be cleared away, and its Place supplied with the best that can be got thereabouts, or, at least, the same Earth returned, with a good Quantity of Dung at the bottom of it, which is indeed a great Expence, but that which cannot be avoided; for I know no other Expedient to mend a bad Soil. A Man is sometimes obliged to be at this Charge, when he buys a Country-House ready built, or has one that falls to him by Succession. And this is all that can be done to repair the natural Defects of an old Garden. But if it be a new Seat you design to make choice of, in an open Country, there are many other Things to be consider'd. It should be first examined what covers the Ground adjacent; and if Heath, Thistles, and other Weeds that grow of themselves, be found upon it, you may judge the Soil is bad, and to be totally rejected, without fear of being deceived in your Judgment. You may also observe, if there are great Trees near, whether they grow crooked, ill-shap'd, and grubby, of a faded Green, and full of Moss; if so, you'll do well to leave this Part of the Country with Speed, and seek another far otherwise: But if the Trees are strait, tall, vigorous, and of a lively Green, not loaded with Moss and Vermin, and the Ground be covered with good Grass, fit for Pasture, or the like; this is a good Encouragement for those that would make use of the Soil, to examine farther into its Qualities.

FOR this purpose, somewhat near the Place you would inclose for a Garden, should be dug five or six Holes in several Places; as about the Extremities, and in the Middle, to search the Ground, the better to understand its Qualities. These Holes should be dug about six Foot broad, and four Foot deep; and when the Earth is cleared out, you may then examine, by the Rod, what Depth there is of good Ground: To do the Business well, there should be three Foot; but by no means less than two.

GROUND, to be good, should neither be stony, nor hard to work; neither too dry, nor too moist, nor too sandy and light; nor, especially, too strong, as the Rank and Clay *Qualities required in good Earth.*

Grounds; which, of all others, are the worst for Gardens.

As to the Colour of good Earth; It should be a gray, inclining to black; the whitish Earths are never good. There is also another Requisite in good Ground; that to the Eye the Surface of it appear neither too dry, nor too moist; and that in Handling, it feel of a temperate Moisture.

La Quintinye. L. Liger. Le Jardinier Francois.

FRUIT Gardeners add to these, That, to know a good Earth, one should consult the Taste and Smell: The Taste, by soaking a Handful of Earth in a Glass of Water, and straining it afterwards through a Cloth; if, in Drinking, you find it has a sharp or bitter Taste, the Fruit and Legumes will have the same: For the Smell, 'tis but taking a little of the Earth in one's Hand, and scenting it, to understand its good or bad Flavour.

As the Fruit that grows about Marly.

THE two last Qualities respect rather the Fruit and Kitchen-Garden, than the Pleasure-Garden, where the Taste and Smell signify nothing. But, as Fruit and Kitchen-Gardens are necessary to a fine Seat, 'twill not be amiss to have Regard to these too, it being very disagreeable to eat Fruit that has a sharp, bitter, or insipid Taste, or that smells like a Cabbage or a Turnep.

THE third Requisite, which is Water, is one of the most considerable of all; for, besides that it is extremely necessary for Life, 'tis also for so many other Purposes, that if a Country-Seat be without it, 'tis the greatest Inconvenience in the World, and brings a certain Mortality on whatever is planted. A Garden necessarily requires Four Things; the Sun, Water, a good Soil, and the Care of the Gardener. Without these, there is no Good to be expected; and 'twould be the greatest Folly to plant a Garden where any one of these are wanting. But Water, above all, is indispensably necessary in every Garden: 'Tis by Waterings the great Droughts in Summer are allayed, which would infallibly burn up all the Plants, had we not the Help of Water to qualify those excessive Heats.

Aqua nutrix omnium virgultorum, & diversos singulis usus ministrat.

ESPECIAL Care, then, should be taken in the Choice of the Ground, that Water may be had without Difficulty: The Necessity of it is as visible, as the Beauty 'twill add, in making

making Jets-d'eaux, Canals, and Cascades, which are, in Truth, the noblest Ornaments of a Garden.

THERE is no need of having so great a Quantity of Water in a Country, * that the Land should be drowned by it: Too much is of no Service in Gardens, but renders Places watry and unwholesome, as I observed before.

* *As at* Ruel, Gentilly, &c.

THE fourth Thing required in a good Situation, is, the View and Prospect of a fine Country: This, indeed, is not so absolutely necessary, as the former, but is yet one of the most agreeable. What Advantage would it be, to plant a Garden in a Place that is buried, and has no kind of Prospect? Such a Situation would be very disagreeable and unwholesome; the Trees themselves would look nothing so beautiful, when too much shaded and obscured. For my own part, I esteem nothing more diverting and agreeable in a Garden, than a fine View, and the Prospect of a noble Country. The Pleasure of seeing, from the End of a Walk, or off a Terrass, for four or five Leagues round, a vast Number of Villages, Woods, Rivers, Hills, and Meadows, with a thousand other Varieties that make a beautiful Landskip, exceeds all that I can possibly say of it; a Sight of these Things being the only Means to form a just Idea of their Beauty.

THE fifth and last Circumstance is, the Conveniency of the Place; which should be of some Consideration with a private Person, in regard of the Advantages he may draw from it. By the Conveniency of the Place, I mean, that the House be near some River, for the more easy bringing to it all Necessaries, and carrying back Provisions for the Town, which is a great Expence saved, when there is Water-Carriage; that the House be not far from a Forest, that Wood may be had the more easily; that the Road that leads to it be good both in Winter and Summer, being either paved or gravelled; and, in a word, that the Necessaries of Life may be, at all times, readily conveyed to it. The Advantage that a House has in being situated near a River, is, that it will at least have good and shallow Wells, if it has not Spring-water; and, by the Help of Pumps, the Water may be raised, and conveyed into Basons; as shall be more largely explain'd in the last Chapter of this Work.

Vitruvius, L. 7. Ch. 1.

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THE two last Conditions, indeed, are not so absolutely necessary, as the three former, which are really indispensable, and to which much the greater Regard ought to be had. But all these joined together, would certainly make one of those excellent and delightful Situations, which are so much esteemed by all the World.

THIS, I think, is all that can be said touching the Situation of a Place. Happy are those that meet with all these several Advantages in one Spot! Supposing, then, to put an End to this Chapter, that a Person has made such a Choice as has been now described, let us proceed to instruct him so to dispose his Ground, as to make a beautiful and magnificent Garden.

CHAP.

CHAP. III.

Of the Disposition and general Distribution of Gardens.

TO make a complete Disposition and Distribution of a general Plan, Respect must be had to the Situation of the Ground: For the greatest Skill in the right ordering of a Garden is, throughly to understand, and consider the natural Advantages and Defects of the Place; to make use of the one, and to redress the other: Situations differing in every Garden.

THE Variety and Diversity of the Composition contributes no less to complete a Garden, than the most discreet and well-contriv'd Distribution; since, in the Opinion of every one, the Gardens that afford the greatest Variety, are the most valuable and magnificent.

'TIS, therefore, the great Business of an Architect, or Designer of Gardens, when he contrives a handsome Plan, with his utmost Art and good OEconomy to improve the natural Advantages, and to redress the Imperfections, Shelvings, and Inequalities of the Ground. With these Precautions he should guide and restrain the Impetuosity of his Genius, never swerving from Reason, but constantly submitting, and conforming himself to that which suits best with the natural Situation of the Place.

THIS is no such easy Task, as some imagine, a fine Garden being no less difficult to contrive and order well, than a good Building; and that which makes a great many Architects, and such as take upon them to give Designs of Gardening, often miscarry, is, that most of them form Designs in the Air, no way proper for the Situation of the Place, and at best but stoln, and pick'd here and there from others.

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ONE great Reason why these People have not the Skill necessary to contrive a good Design, is, That this Knowledge coming farther off than they imagine, they are destitute of the Qualifications requisite for this purpose. A Man should know something of Geometry and Architecture, and be able to draw well; he should understand Ornament, and be acquainted with the Properties and Effects of all the Plants made use of in fine Gardens; should design readily; and, with all this, have a right Judgment, and natural good Taste, form'd upon the Contemplation of Things that are excellent, the Censuring of those that are ill, and a consummate Experience in the Art of Gardening.

THERE are the very meanest Gardeners, who, laying aside the Rake and Spade, take upon them to give Designs of Gardens, when they understand nothing of the Matter. Unhappy are those that fall into the Hands of such Persons, who put them to a great Expence to plant a sorry Garden; when it costs no more to execute a good Design, than an ill one! The same Trees and Plants are constantly made use of, and produce an ill Effect only through their bad Disposition.

A MAN that has Wealth, who would plant a handsome Garden, should do two Things: Make Choice of a Person of very good Ability in the Art of Gardening; and be well advised about the Charge, that the Size of his Building, and the Extent of his Garden, may be answerable to the Expence he would be at. These two Things are so essential, that they ought never to be omitted. He should consider, that the larger his Garden is, the more it will cost to make the Ground, to plant, and execute all the Designs, and to keep the same in Order. If there are Fountains, the Basons and Water-works will be larger, the Pipes of greater length, and consequently the Expence will be infinitely more.

Melior enim est culta exiguitas, quam magnitudo neglecta. Palladius de Re rustica. L. 1. tit. 34.

IT is better, therefore, to be content with a reasonable Spot of Ground, well cultivated, than to be ambitious of having Parks of such Extent, that three Quarters of them are ordinarily neglected. The true Size for a handsome Garden, may take in 30 or 40 Acres, not more. As to the

the Building, which generally ſwallows up half the Expence, there is no Neceſſity that it ſhould be ſo large and ſo magnificent, tho' many ſtand upon it to have Palaces, and to be lodg'd better in the Country than in Town. One may juſtly ſay, that a Building in the Country ſhould be proportioned to the Extent of its Garden; for it would be full as diſagreeable, to ſee a magnificent Building in a little Garden, as a ſmall Box in a Garden of vaſt Extent: Theſe are two Extremes which ſhould be equally avoided, by making the Building correſpond with the Garden, and the Garden with the Building. However, it were better of the Two to make ſhift with a ſmall Houſe, accompanied with a large Garden; by reaſon a Country-Houſe ought to differ from one in Town, where the Extent of Buildings is more neceſſary than that of Gardens, on account of being the more uſual Place of Dwelling, and of Land bearing a higher Value: The Country we court chiefly, to have our Gardens in it more vaſt and magnificent.

THESE that follow are ſomewhat near the general Rules one ought to obſerve in the Diſpoſition and Diſtribution of Gardens.

THERE ſhould always be a Deſcent from the Building to the Garden, of three Steps at leaſt; this renders the Fabrick more dry and wholſome; and from the Head of theſe Steps you have a general View of the Garden, or of great Part of it, which yields a moſt agreeable Proſpect.

A PARTERRE is the firſt Thing that ſhould preſent itſelf to Sight, and poſſeſs the Ground next the Fabrick, whether in Front, or on the Sides; as well on Account of the Opening it affords the Building, as for the Beauty and Splendor wherewith it conſtantly entertains the Eye, when ſeen from every Window of the Houſe. The Sides of a Parterre ſhould be furniſhed with ſuch Works as may improve and ſet it off; for this being low, and flat, neceſſarily requires ſomething raiſed, as Groves and Paliſades are. But, herein, Regard ſhould be had to the Situation of the Place; and it ſhould be obſerv'd, before you plant, whether the Proſpect that way be agreeable; for then the Sides of the Parterre ſhould be kept entirely open, making uſe of Quar-

ters of Grass, and other flat Works, to make the best of the View, and taking Care not to shut it up with Groves, unless they are planted in Quincunce, or opened with low Hedge-Rows, which hinder not the Eye from piercing through the Trees, and discovering the Beauties of the Prospect on every Side.

IF there be no Vista, but, on the contrary, you have a Mountain, Hill, Forest, or Wood, that by their Vicinity deprive you of that Pleasure, or some Village too near adjoining, the Houses of which make no agreeable Sight; you may then edge the Parterre with Palisades and Groves, to hide those ill-favour'd Objects; for by this Means you lose nothing, nor have any thing to regret in Time to come.

As was done in the Gardens of Conflans.

WOULD it not be a great Grievance, to be obliged, some Years after planting, to grub up a Wood, or to cut it down to a certain Height, because 'twas ill placed at first, and takes away the Prospect, which is the most valuable Thing about a Country-Seat?

GROVES make the Chief of a Garden, and are a great Ornament to all the other Parts; so that one can never plant too many of them, provided the Places design'd them take not up those of the Kitchen and Fruit-Gardens, which are Things very useful and necessary for a great House, and which should be constantly placed near the Bass-Courts.

TO accompany Parterres, we make Choice of those Designs of Wood-work that are most delicate, as Groves opened in Compartiments, Quincunces, Verdant-halls, with Bowling-greens, Arbour-work, and Fountains in the middle. These small Groves are so much the more agreeable near a House, in that you presently find Shade, without going far to seek it; besides, they communicate a Coolness to the Apartments, which is very much courted in hot Weather.

IT would be of use to plant some small Groves of Evergreens, that you might have the Pleasure of seeing a Wood always verdant in the very coldest Seasons. They would look very well when seen from the Building; and I earnestly recommend the Planting of some Squares of them in a handsome Garden, to make a Diversity from the other Wood;

Wood; which, having loſt its Leaves, appears quite naked all the Winter.

THE Head of a Parterre is uſually adorned with Baſons, or Water-works; and beyond, with a circular Line of Paliſades, or Wood-work, cut into a Gooſe-foot, which leads into the great Walks; and the Space between the Baſon and the Paliſade is fill'd with ſmall Pieces of Embroidery, or Graſs-work, ſet out with Yews, Caſes, and Flower-Pots.

IN Gardens that have Terraſſes, whether Side-ways, or in the Front of the Building, where there is a delightful Proſpect, as you cannot ſhut up the Head of the Parterre by a circular Paliſade, you muſt, to continue the View, lay ſeveral Compartiments of a Parterre together, ſuch as Embroidery, Green-Plots, after the *Engliſh* Manner, or Cut-work, which ſhould be divided at convenient Diſtances by Croſs-walks, taking Care that the Parterres of Embroidery be always next the Building, as being the richeſt and moſt magnificent.

THE principal Walk ſhould be made in Front of the Building, and another large one to croſs it at right Angles, provided that they be double, and very wide. At the End of theſe Walks, the Walls may be pierced with Grills, or have Openings with Ditches at the Foot of them, to continue the View.

IF you have any Part of your Ground naturally low and marſhy, that you would not be at the Expence of filling up, you may employ it in Bowling-greens, Water-works, and even in Groves, raiſing the Alleys only to the Level of thoſe that are near them, and that lead thither. *As the Groves of* S. Cloud.

AFTER you have laid out the great Walks and chief Lines, and have diſpoſed the Parterres and Works about the Sides and Head of them, as is moſt ſuitable to the Ground, you may furniſh the reſt of the Garden above with many different Deſigns, as tall Groves, Quincunces, Cloſe-Walks, Galleries, and Halls of Verdure, Green-Arbours, Labyrinths, Bowling-greens, and Amphitheaters, adorned with Fountains, Canals, Figures, *&c.* Which Works diſtinguiſh a Garden very much from what is common, and contribute not a little to render it magnificent.

YOU ſhould obſerve, in placing and diſtributing the ſeveral Parts of a Garden, always to oppoſe them one to the other: For Example; A Wood to a Parterre, or a Bowling-green; and not to put all the Parterres on one Side, and all the Wood on the other; nor to ſet a Bowling-green againſt a Baſon, which would be one Gap againſt another: This muſt be conſtantly avoided, by ſetting the Full againſt the Void, and Flat-works againſt the Raiſed, to make a Contrariety.

AND this Diverſity ſhould be kept not only in the general Deſign of a Garden, but likewiſe in each diſtinct Piece; as, if two Groves are upon the Side of a Parterre, tho' their outward Form and Dimenſions are equal, you ſhould not, for that Reaſon, repeat the ſame Deſign in both, but make them different within. For it would be very diſagreeable to find the ſame Thing on both Sides; and, when a Man has ſeen one, to have Nothing to invite his Curioſity to ſee the other; which makes a Garden, ſo repeated, juſtly reckon'd no more than half a Deſign. This Fault was formerly very common; but is not ſo of late, every one being now convinced, that the greateſt Beauty of Gardens is Variety. The ſeveral Parts of each Piece ſhould alſo be diverſifyed, as, if a Baſon be circular, the Walk that ſurrounds it ſhould be Octangular; and ſo of Bowling-greens, and Graſs-Plots, that are in the midſt of Groves.

The Garden of the Tuileries *is near alike on both Sides.*

THE ſame Works ſhould never be repeated on both Sides, but in open Places, where the Eye, by comparing them together, may judge of their Conformity, as in Parterres, Bowling-greens, Groves opened in Compartiments, and Quincunces. But in Groves formed of Paliſades and tall Trees, the Deſigns and Out-parts ſhould be always varied; which, tho' different, ought, however, to have ſuch Relation and Agreement with each other in their Lines and Ranges, as to make the Openings, Glades, and Viſtas, regular and agreeable.

IN the Buſineſs of Deſigns, you ſhould ſtudiouſly avoid the Manner that is mean and pitiful, and always aim at that which is great and noble; not making little Cabinets and Mazes, Baſons like Bowl-diſhes, and Alleys ſo narrow, that

that two Persons can scarce go abreast in them: 'Twere infinitely better to have but two or three Things somewhat large, than a dozen small ones, which are no more than very Trifles.

BEFORE the Design of a Garden be put in Execution, you should consider what it will be in 20 or 30 Years to come, when the Trees are spread, and the Palisades grown up: For, very often, a Design, which looks handsome and of good Proportion when it is first planted, in Process of Time becomes so small and ridiculous, that one is obliged to alter it, or to destroy it entirely, and plant another in the room of it.

THE Corners and Angles of every Part of a Garden should be sloped, and cut hollow, which would make the Cross-Paths more agreeable to the Eye, and more convenient for Walking, than to find Points and Corners advancing, which look very ill upon the Ground, and are very inconvenient.

THERE are many other Rules besides these, relating to the Proportion, Conformity, and Place of the different Parts and Ornaments of Gardens; which being treated of in the following Chapters, I shall say no more of them in this Place.

AFTER all these general Rules, the several Sorts of Gardens in use may be distinguish'd under three Heads. Gardens on a perfect Level, Gardens on an easy Ascent, and Gardens whose Ground and Level are separated and interrupted by Falls of Terrasses, Slopes, Banks, Flights of Steps, *&c.*

GARDENS on a perfect Level are certainly the best, as well for the Conveniency of Walking, as for that their long Alleys and Glades, having no Risings, nor Fallings, are less chargeable to keep than others.

GARDENS on a gentle Ascent are not altogether so agreeable and convenient; tho' the Shelving be imperceptible, it, nevertheless, fatigues and tires one extremely, to be always going up Hill, or down Hill, without finding scarcely any Resting-Place. These sloping Grounds are also very liable

to

to be ſpoiled by the Torrents, and require a conſtant Charge to maintain them.

GARDENS with Terraſſes have their peculiar Worth and Beauty, in that from the Height of one Terraſs you diſcover all the lower Part of the Garden; and from others, you ſee the Compartiments, which form ſo many ſeveral Gardens one under another, and preſent you with very agreeable Views, and different Scenes of Things, provided the Terraſſes are not too frequent, and there be good Lengths of Level between them. Theſe Gardens lie very advantageouſly alſo for Water, which may be repeated from one to another; but they are a great Charge to keep up, and coſt a great deal the Making.

'TIS to theſe different Situations, that the general Diſpoſition of a Garden, and the Diſtribution of its Parts, ought ever to be accommodated: This is ſo evident, that an excellent Deſign, which would be very proper for a Garden flat and upon a perfect Level, would be good for nothing in a Ground cut aſunder by divers Terraſſes, which break off both the Level and the Continuity.

THE four following Plates afford Examples of all theſe ſeveral Situations, and give the Idea of what may be performed in them of the beſt Contrivance. The Deſigns may perhaps appear too magnificent, and too coſtly, to be put in Execution; and ſo may all the other Deſigns of this Work: But you need take thoſe only that you like; and there is no doubt, but a compoſed and elaborate Deſign will anſwer your End better than one that is altogether plain and ordinary. You may therefore take out what you think for your Purpoſe; and for what concerns the Magnificence, as Figures, Fountains, Arbours, and other Ornaments, you may retrench them; or, in the place of Baſons and Water-works, make uſe of Rounds and Green-Plots, which nevertheleſs may do very well.

ALTHOUGH I have determined the Size of theſe general Plans to 60, 30, 20, or 10 Acres, you may nevertheleſs make uſe of them for greater or leſſer Grounds, by diminiſhing or augmenting the Parts which compoſe them.

FOR

FOR the Benefit of those that are unacquainted with the Fathom, and would know how much Ground these Dispositions, and each particular Part does take up; I shall mention, that they need only measure with the Compasses 30 Fathom upon the Scale, and make a Square of it upon the Plan; and this shall contain one Acre, because 30 Fathom every way, makes 900 Square Fathom, * or 3600 Square Yards; which is the Content of an Acre. Upon a Line, the Acre contains a hundred Pearches, or 300 Fathom in length, and one Pearch, or three Fathom in breadth, which amounts to the same.

The Fathom of these Designs is six French Foot, equal to six Foot four Inches and a half English.

** The English Acre is 4840 Square Yards, but our Foot being but 11 Inches and a quarter of the French Foot, you may compute seven French Acres make six English.*

THE first Plate presents you with one of the noblest and most magnificent Designs that can be: It is made for a flat Ground, of about 50 or 60 Acres Extent. A great Avenue is supposed to lead to the Grill, or Gate of the Outer-Court, separated by the Walls of the two Bass-Courts, upon the Wings, which are environed with very regular Buildings, serving on one Side for Stables, * *Menagery*, Stalls for Cattle; Granarys, Barns, and other Conveniencies required in a Bass-Court; and on the other Side, for Lodging-Rooms for Servants, and a long Green-house fronting the Orangery. This Fore-Court leads you into the Castle-Court, which is parted from the other only by a wet Mote. The Building consists of a large double Pavilion in the Middle, with Sides stretching each way to two Pavilions at the Ends; in Front of which are two small Terrasses, from which you discover on the Left a Parterre of Compartiment, and above it a Grass-work, encompassed with Cases and Yews, with Water-works in the Middle. Beyond is a large Kitchen-Garden walled in, which contains two Squares, each having four Quarters, with Basons. It is terminated by a long Arbour, with three Cabinets facing the Walks and Pavilions. On the Right are Green-Plots cut, to answer the Walks, having Water-works, as on the other Side. These are bounded by a double Line of Cases and Yews, and behind, by green Niches for Seats and Figures. On the Side is a Parterre of Orange-Trees walled in, having Iron Grills against the Walks; and at the End is a Bason, with Cabinets and green Niches for Seats.

** Menagery is a Place where they keep Animals of several Kinds for Curiosity.*

THE

THE Entrance of the great Garden is by the Descent of Steps from the Building, where you have a large Cross-walk, terminated by Grills of Iron; and another great double Walk, which runs from one End of the Garden to the other, as do those two also by the Walls which inclose the Ground. Immediately under your Eye, are four Pieces of Parterre, two of Embroidery, and two of Compartiment, with Basons in the midst. These are accompanied by two open Groves, adorned with Bowling-greens; and beyond them is another large Cross-walk of Yews, in the Middle of which is the great Bason. The Head of this Parterre is composed of four small Grass-Plots, with Edgings of Box and Yews; and above is a Half-Moon of Palisades, whose circular Walks run through that which divides the four great Quarters of the Parterre before the House. This Half-Moon is parted into a Goose-foot, and its Alleys are very fine, leading you to other Basons and Cabinets quite different. Between each Alley, it is set out with Niches for Figures, which makes a beautiful Ornament every way. The Groves are accompanied with two Quincunces, set off with Cabinets, and a Hall in the Middle, with Figures. There is also a Cross-walk made by the Palisades and Trees of the Groves, where there are two Basons, whose Spouts are in a Line with the great ones of the Middle Walk. Beyond are four Groves, cut like St. *Andrew*'s Cross, all different. The two upon the Right of the great Walk, contain a Hall adorned with Seats and Figures, with a Bowling-green, and another Hall with Benches of Earth, which may serve for an Amphitheater, or Theater for playing Comedies. In the two on the Left, there is an Oval Hall, with a Bowling-green, different from the other, and a little Hall of Fountains, contrived in the four Middles, without interrupting the Line. All these Works appear very magnificent when executed, being divided by Alleys, that range with those of the upper and lower Parts of the Garden, either in their Square Lines or Diagonals, which makes the Views and Glades of a very great Length.

BEYOND these Groves is a large Canal, reaching the whole Breadth of the Garden; in the midst of which is a

Group

Group of Figures, as *Neptune* with *Tritons* throwing one great Spout, and many leſſer every way. At each End of this Canal, the Walls are opened, with wet Ditches, to preſerve the Proſpect. Farther on are two large Woods of high Trees cut into a Star, the Alleys of which are double, and planted with Trees that ſtand detached. In the middle of theſe Woods are two different Iſles with Figures and Yews. At the End of the great Walk, and beyond theſe Woods, you meet with a low Terraſs-Wall, from whence you have a View of the Country round about; a wet Ditch runs the whole Length of this Wall; and in the Front of the Half-Moon, at the End of the great Walk, is made a Caſcade, which has three Mask-heads, and a Sheet of Water, that falls again into a Water-work of two Jets, the Water of which comes from the Canal, and ſupplies all the Ditch without the Garden. A Termination of this Kind is certainly the moſt magnificent that can be; and, without enlarging farther upon the fine Lines and Views from one End of the Garden to the other, and the Convenience of the Parts, together with what is to be found in the ſeveral Alleys, Figures, Fountains, Openings, Grills, and the like, it muſt be acknowledged this Deſign is ſufficient to ſatisfy any one in its Diſpoſition, Variety, Ornaments, and Diſtribution of the Water.

Fr. Arbres iſolés, i. e. *Trees that ſtand not in a Paliſade, or Hedge-Row, but free, ſo as you may go round them.*

THE ſecond Plate gives the Idea of a Garden, in its Kind not much inferior to the other, but nothing near ſo large, containing no more than 25 Acres: It is ſeated in a Ground divided into Terraſſes that face the Building, which is here ſuppoſed to be planted in the midſt of a Park, or Country, where the Lines of the Walks are continued quite through the Woods and Fields. You enter into a handſome Fore-Court with Graſs-Plots, and a Fence of Wood, which on the Left leads to a large Kitchen-Garden, parted into ſix Squares, with a Baſon; and on the Right into a Baſs-Court, ſurrounded with Buildings; from whence you paſs into another Court, where is a Wat'ring-Place, and a Dove-Houſe, with other Conveniencies; you enter this Court likewiſe from the Fields, and it ſerves as a Store-Yard to the Baſs-Court. Above is a Parterre of Orange-

Trees with a Baſon, terminated by an Arbor of Lattice-Work in a circular Form, adorn'd with three Cabinets, behind which is contrived a very curious ſmall Grove. At the End of the Fore-Court you find a great Court, bounded by Galleries, Pavilions, and a long Range of Building at the Bottom, which renders the whole very regular.

YOU go down Steps to the Gardens, which preſent you firſt of all with a great Terraſs, laid quite open for the Sake of the Proſpect, and filled with two Pieces of Parterre of Embroider'd-Work, with * Counter-Borders, accompanied with Bowling-greens, the Bottoms of which are enriched with Cut-work in Graſs. On the other Side are two Heads of Water, which are Conſervatories for the Fountains at the lower End of the Garden. You deſcend from this Terraſs at each End, and in the Front of the middle Walk, by great Stairs made Horſe-ſhoo-Faſhion, ornamented with three ſmall Jets, which are level with the firſt Terraſs, and throw a Sheet of Water into the Baſon below. On the ſecond Terraſs you find four Groves, two of which are open in Compartiments, and the other two are planted in Quincunce, or Squares, which do not interrupt the Proſpect. The Deſigns of them are very curious, and they are ſet off with Baſons and Figures. The great Walk in the Middle, and the others, are continued, and planted with Yews, and Trees that ſtand detached. There is a great Baſon with Water-works facing the Middle-Walk, and a Croſs-Walk, planted with Horſe-Cheſnuts beyond the Groves. The Alley round this Baſon makes the Terraſs advance in a circular Form, where are two Flights of Stairs with Steps, Reſts and Landings againſt the Gooſe-Foot, which is cut in the Wood of Foreſt-Trees below, and forms a Half-Moon of Horn-beam, adorn'd with Figures in Niches. You go down likewiſe by Steps, which lie at each End of this Terraſs.

* *Fr.* Plates-bandes iſolées, *or Counter-orders.*

THE two Flights of great Stairs in the Middle incloſe a Baſon with Water-Spouts, which fall into another, where there are four Jets that throw a Sheet of Water into a Baſon below, which makes the Head of a Caſcade that runs into the great Canal at the Bottom. All this Water runs along little

little Channels, and falls foaming into Basons, where there are Water-Spouts: On the Side of these Channels are small Stands of Water, which are continu'd to the very lower End, as well as the Basons and Spouts of this Cascade; all which discharge their Water into the Canal, out of the Middle whereof rises a very large Jet d'eau. There may be small Boats to go upon this Canal, and it serves likewise for an Inclosure, and to separate the Park and Garden. The Forest-Wood that accompanies this Cascade is cut with diagonal Walks, and a large circular one, where you find Cross-Paths and Green-Plots. The Diagonals lead you by Alleys that return Square into four Cabinets all different. In the two upon the Right you have a great Circle, environ'd with a Palisade cut into Arcades, with an octangular Bowling-green in the Middle, and a long Hall, with Niches cut for Figures, and two Sinkings for Shells and Buffets of Water: In the Middle is a Grass-work after the *English* Manner, encompassed with a Flower-Border. The two Groves on the Left consist of a green Hall, with a Row of Trees that stand detached, and a close Walk in Cants, formed by plashing the Trees into a natural Arbor; the Middle is filled with a Bowling-green set out with Yews. 'Tis to be observ'd, that the Level of the Walks of these Groves ought to be kept to that of the great Walk in the middle, and of those on the Sides, which is supposed to be a gentle Sloping, by reason of the Cascade.

THE general Disposition of the third Plate describes a Garden situated on the Rising of a Hill, whose Terrasses are upon the Side, to distinguish it from the foregoing Design, where they are in Front. The Building here is very plain, and has no Out-Courts, which makes this Design less expensive to execute than the others. The Court has two Pavilions, with a large Grill between them, and a Bass-Court surrounded with Buildings, where there is a Dove-House and Watering-Place: Behind the Bass-Court are four Squares of Kitchen-Garden, with a Bason in the Middle. On the other Side of the Court is a small Terrass, which ranges with the Left Pavilion at the Entrance and the Corner of the House, and leads you along by the Court into

the Garden. In Front of the Houſe, you find upon a long Terraſs ſix Quarters of Parterre, with a large Alley in the Middle, and one on each Side, with Croſs Alleys to divide the Quarters; two of which are of Embroidery, two of Compartiment, with a great Baſon in the Middle; and the two others after the *Engliſh* Manner, ſurrounded with a Border cut, and garniſhed with Flowers, Yews, and * Shrubs. The End of this Terraſs is terminated by an Opening, which the *French* call a *Claire-voïe*, or an Ah, Ah, with a dry Ditch at the Foot of it. From this Terraſs you go up Steps at each End, and againſt the Baſon, to a higher Terraſs, where you have a large Wood-work cut into a Star, with a circular Alley, and eight Croſs-ways; in the Middle is a Water-work, with a Jet d'eau, which ſerves for a Reſervoir, or Conſervatory, for the other Baſon below; on the Side is a green Gallery, compaſſed about with Standards and Graſs-Plots with Figures. This Gallery is accompanied with a large double Walk, and a Green-Plot in the Middle, which leads to the Houſe.

* *Fr.* Arbriſſeaux, *Flowering Shrubs, as Roſe-Trees, Honey-ſuckles,* Perſian *Lilachs*, &c. *which are kept to four or five Foot high at moſt.*

As to the Gardens below, you go down from the Terraſs before the Houſe by two Deſcents of Steps, which bring you on another Terraſs, that has two Bowling-greens with Oval Baſons, an open Grove in Compartiment, and a Quincunce; all of them ſet out with Figures and Green-Plots, and divided by Alleys, anſwering thoſe of the upper Terraſſes. This Terraſs is ſupported by a Slope of Graſs, in which are three ſeveral Deſcents to another Terraſs, half of which is taken up by a Canal, or large Square of Water, with a Jet in the Middle of it. The reſt is a Wood-work, planted in a very handſome Compartiment: This Terraſs is ſuſtained, as the other, by a Slope of Graſs, with a Ditch at the Foot of it, which lies without the Garden. Theſe four Terraſſes are bordered with Yews, Caſes, and Flowering-Shrubs; and are ſet off with many other Ornaments, as may be eaſily conceived, without farther Explication.

THE fourth Plate contains two different Diſpoſitions of ſmall Gardens, fit for the Houſes of Private Perſons.

THE

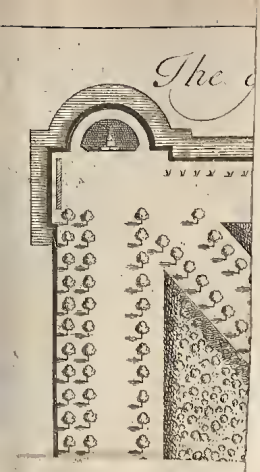
THE Diſpoſition of the firſt Figure may be performed in the Space of five or ſix Acres, and yet comprehends all that can be wiſhed for in ſo ſmall a Garden. You enter in Front of the Building into a Court adorned with Graſs-Plots and Walks, accompanied on the Left with a Baſs-Court, behind which, is a Nurſery: Upon the Right is a Kitchen-Ground walled in. The Houſe ſtands detached, and, by the two Grills on the Sides, parts the Garden from the Court. 'Tis a ſingle Range of Building, with different Fronts; that on the Court Side breaks out with a Pavilion in the Middle, which has Steps beneath; the Garden Front has a Pavilion with Steps at each End. On the Sides there are Croſs-walks, terminated by Grills the whole Breadth of the Walk. In Front of the Building is a Parterre, with Walks cut diagonally, or like St. *Andrew*'s Croſs, to which you enter at the Ends that anſwer the two Deſcents from the Pavilions. On the two Wings of this Parterre there are two Alleys facing the Grills of the Court, which are terminated by Figures and Niches made in the Paliſade of Wood. Upon the Side of theſe Alleys are two Groves; the one a green Hall, with a Bowling-green; and the other a cloſe Walk, made by a natural Arbor; both of them adorned with Figures that face one another. Beyond theſe Groves you find a large double Croſs-walk, planted with Horſe-Cheſnuts, and Yews between them, anſwering the great Baſon at the End of the Parterre, which is ſeen from all the Walks, and chiefly from the great double Walk before the Houſe, which runs from one End to the other. This Walk is very large, and cuts into a tall Wood; in the midſt of which is a great Circle, where the Lines of a Star made in the Wood meet and concenter: Theſe are interſected by other ſtrait Alleys, with four circular Croſs-ways, and Diagonals, that center upon the two Baſons at the Ends. The Baſon that terminates this great Walk is in Cants, and is ſeen from the Croſs-walk at the End. This whole Line is terminated by a large Grill beyond the Baſon; and along the Wall is a thin Gut of Wood, as well to hide it, as to make the Garden appear the bigger. At each Corner are

Niches

Niches and Figures, which are ſeen from the Walks round the Walls, and from the diagonal Alleys of the Wood.

IN the ſecond Figure is repreſented a Garden ſomewhat more magnificent than the foregoing, and half as big again: The Building here is likewiſe detached, but conſiſts of a great double Pavilion, with four Deſcents of Steps; one of which faces the Court before it, which is flanked by two Wings of Building, incloſing on one Side a Kitchen-Garden, and on the other a Baſs-Court, through which you paſs into a higher Court, where is a Square of Water, that ſerves as a Head to the other Baſons of the Garden; the two Sides of the Houſe look, one upon a Parterre after the *Engliſh* Manner, and the other upon a Bowling-green, each of them having the Ornament of a Baſon. Theſe two Pieces are attended with double Walks, terminated by Ditches, for the Advantage of the Proſpect. In the chief Front of the Building is one great Square of Parterre of Embroidered Work, with two Walks garniſhed with Caſes and Yews, which anſwer the Pavilions of the Wings of the Court. Upon the Sides of the Parterre you meet with two Groves; one opened in Compartiment, the other planted in Quincunce; both cut into Stars, and adorned with Figures. Beyond theſe Groves is made a great Croſs-Walk, as uſual, terminated by Grills, and diſcloſing the great Baſon at the End of the Parterre.

BEYOND this Baſon, and this Walk, there is ſuppoſed to be a gentle Fall of Ground going down to the two Groves of tall Trees, which has obliged me to ſuſtain the Earth by a ſmall Wall, with two Deſcents of Steps facing the Counter-Walks of the Parterre. This Wall runs no farther than the Breadth of the Middle Opening, and you go down to the Woods by eaſy Slopes of Earth. Between the Stairs there is a ſmall Caſcade, made by three Mask-Heads, the Water of which comes from the Baſon, and makes a Sheet into the Canal, which runs the whole Length of the great Walk. This Canal is made with a Sweep at the upper End, and is accompanied with two double Walks planted with Yews, ranging with thoſe of the Parterre; and

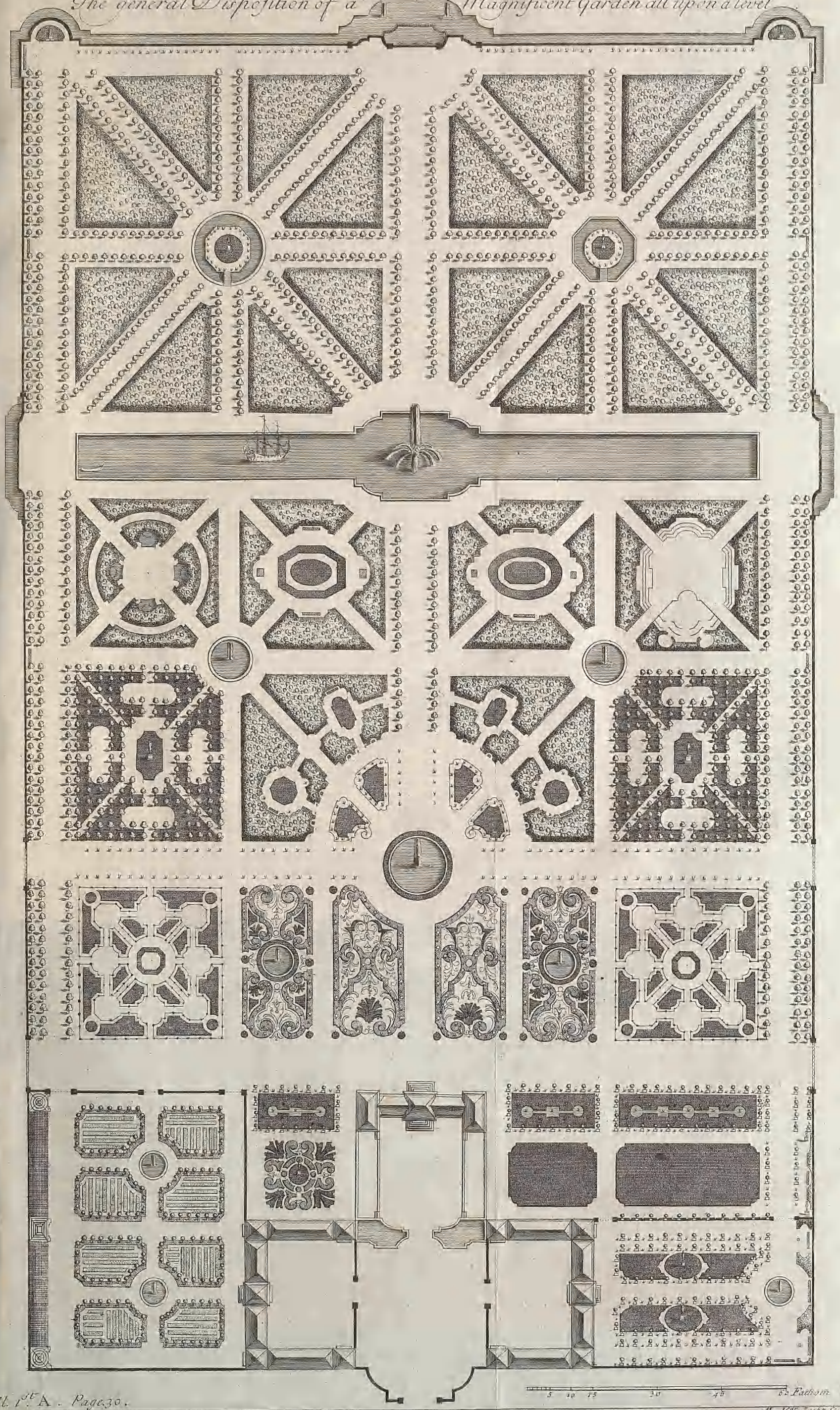


10 20 30 40 50 Fathom.

ate 3d A.

M.V.dr Gucht Scul:

The general Disposition of a Magnificent Garden all upon a level



Pl. 1st A. Page 30.

M. Pa Tacht Scul.

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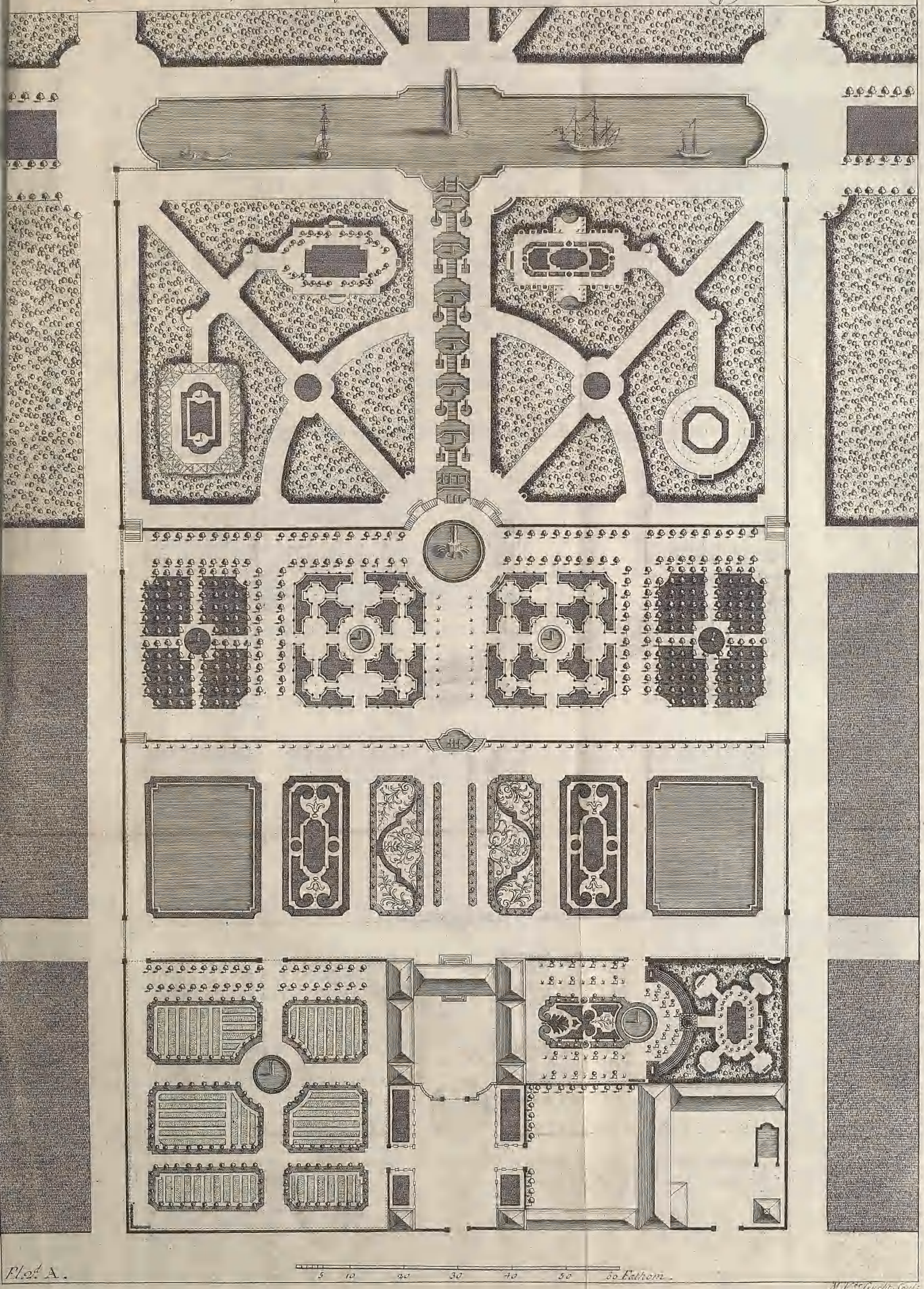
late 3.d A.

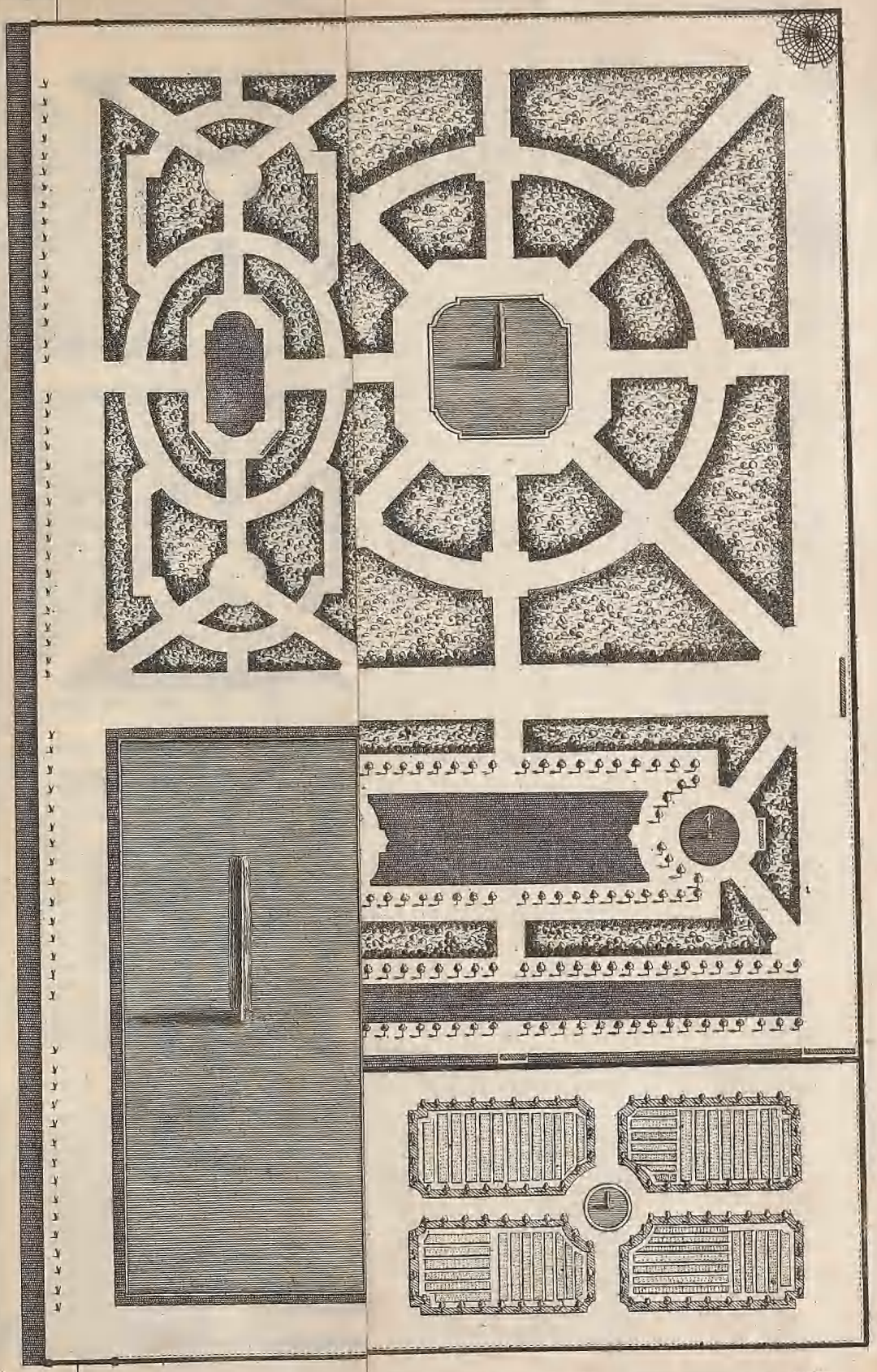
The general Disposition of a Garden where Slope is in Front of ye Building.



Plot A.

M. Pte Gucht Sculp.

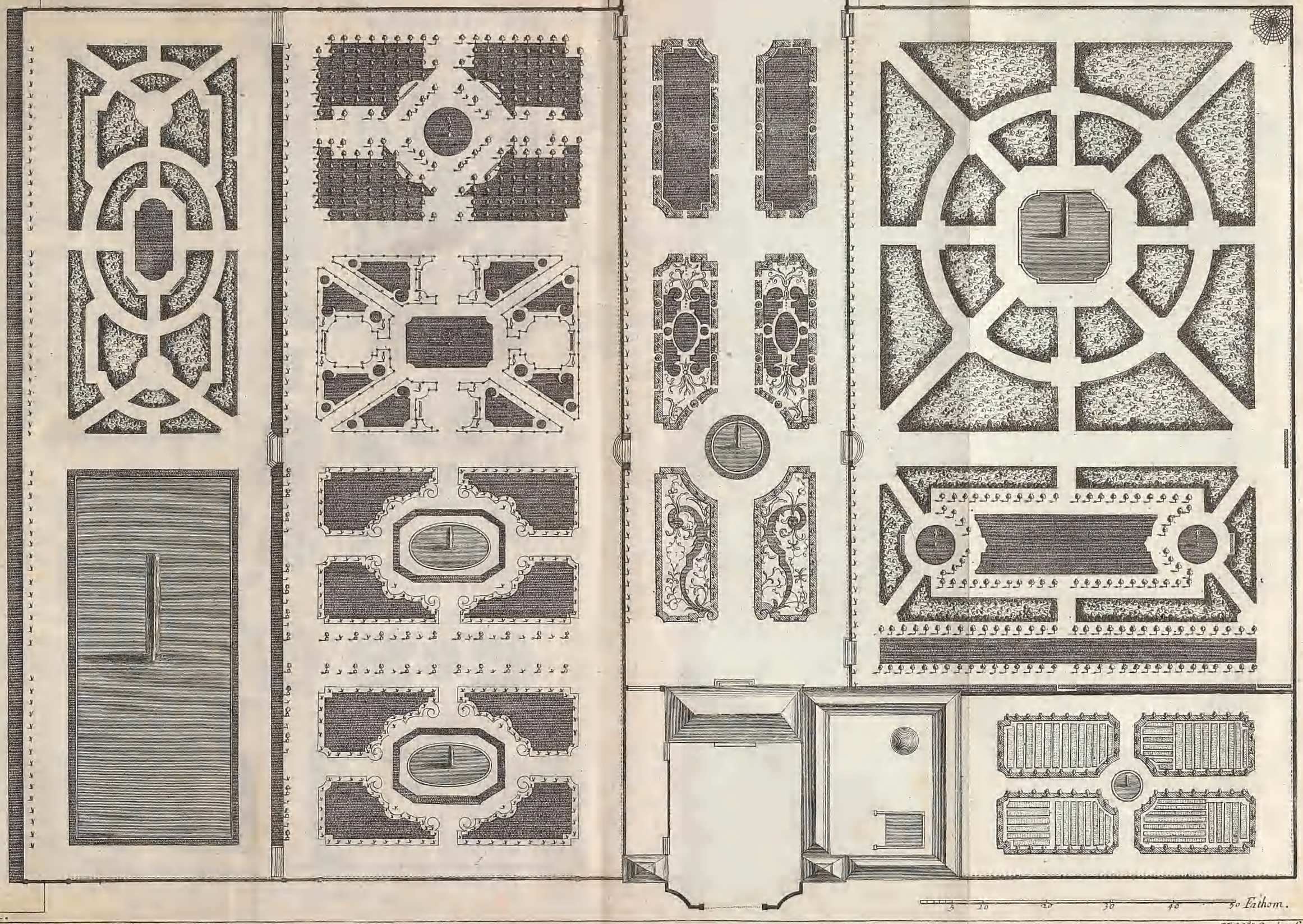
The Declivity is Sideways.



ate 34 A.

M. Vr. Gucht Scul:

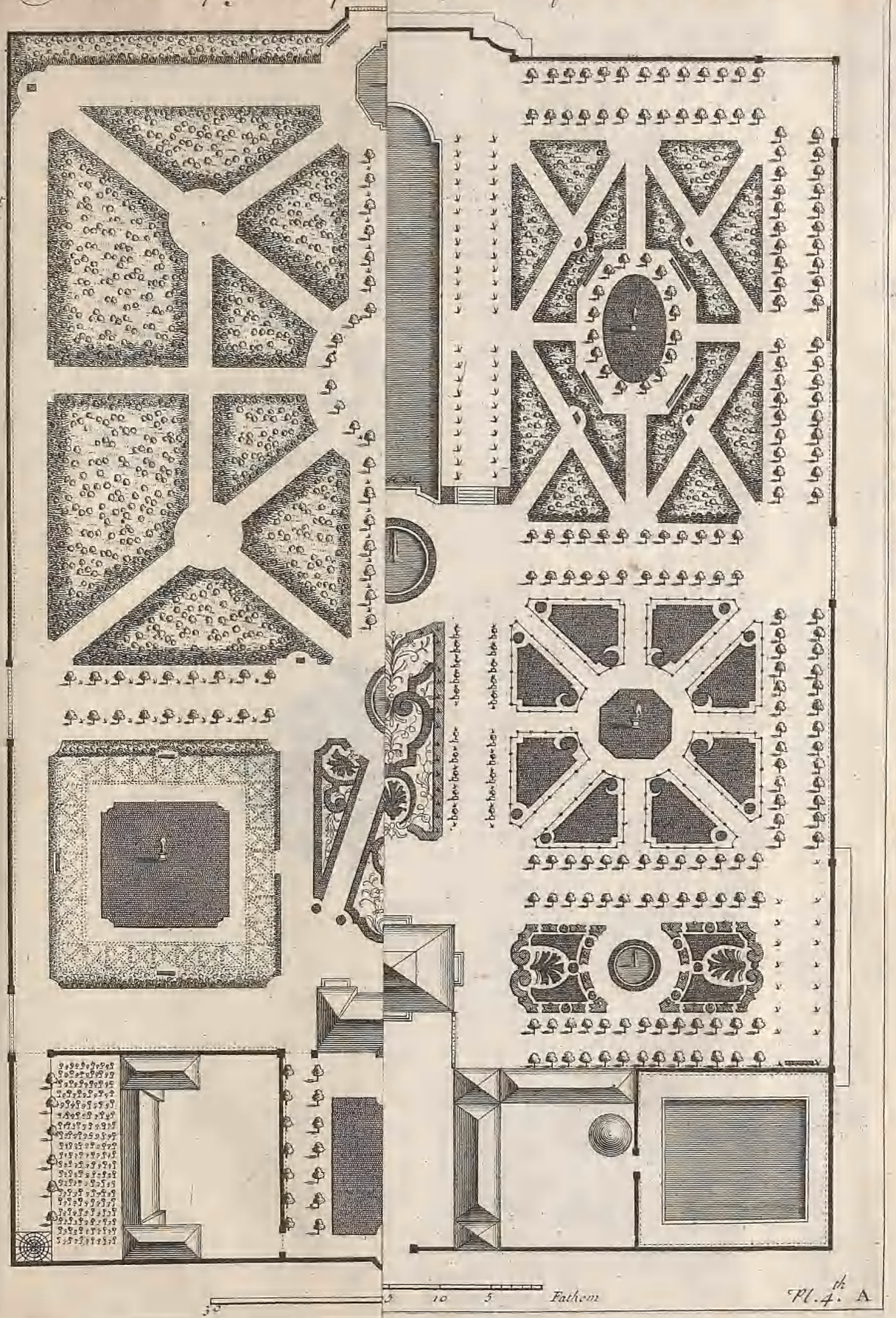
The general Disposition of a Garden where y^e Declivity is Sideways.



ate 3^d A.

M. V^an Gucht Sculp:

The general Disposition of a Garden of Twelve Acres.

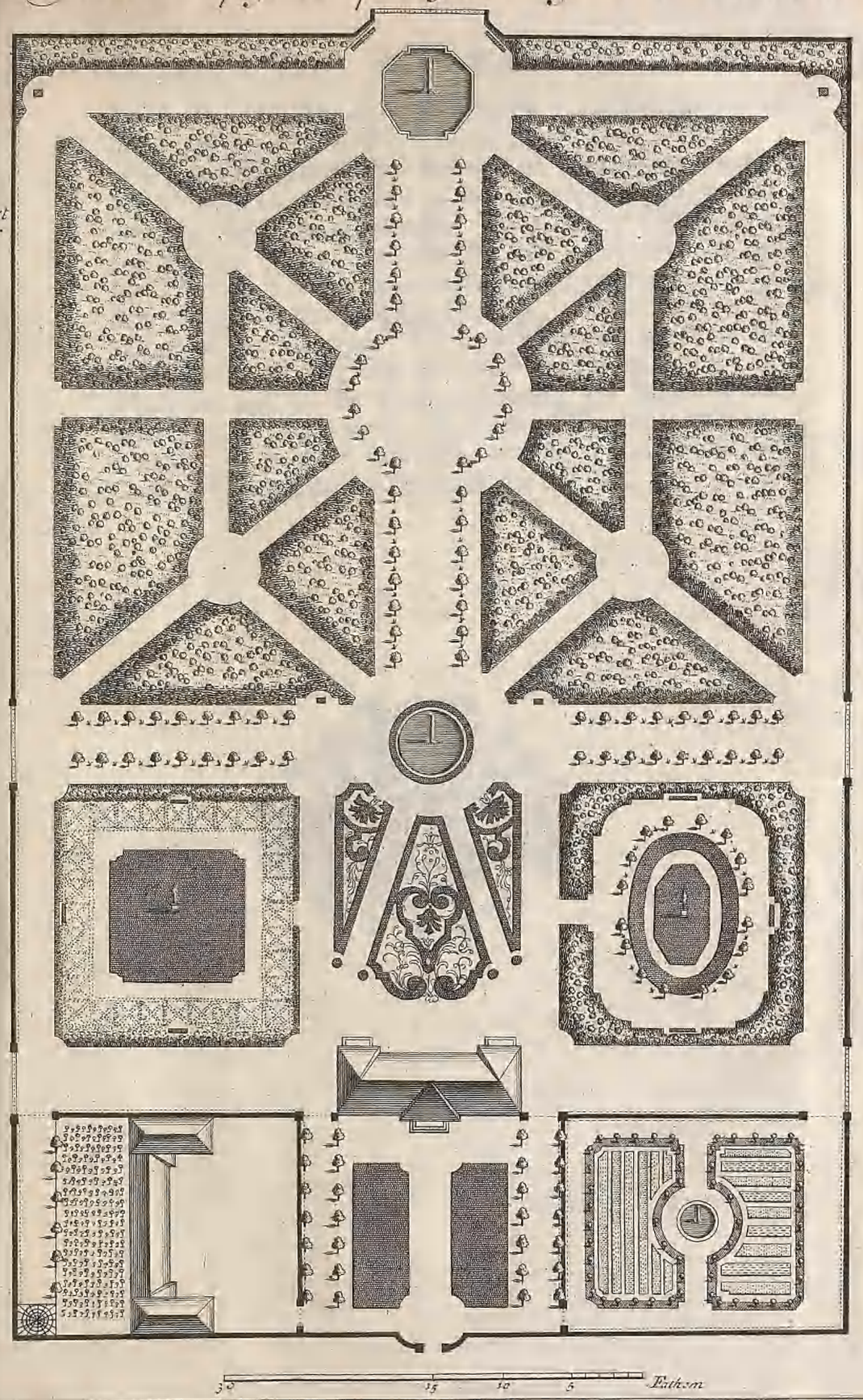


Pl. 4th A

ght Sc.

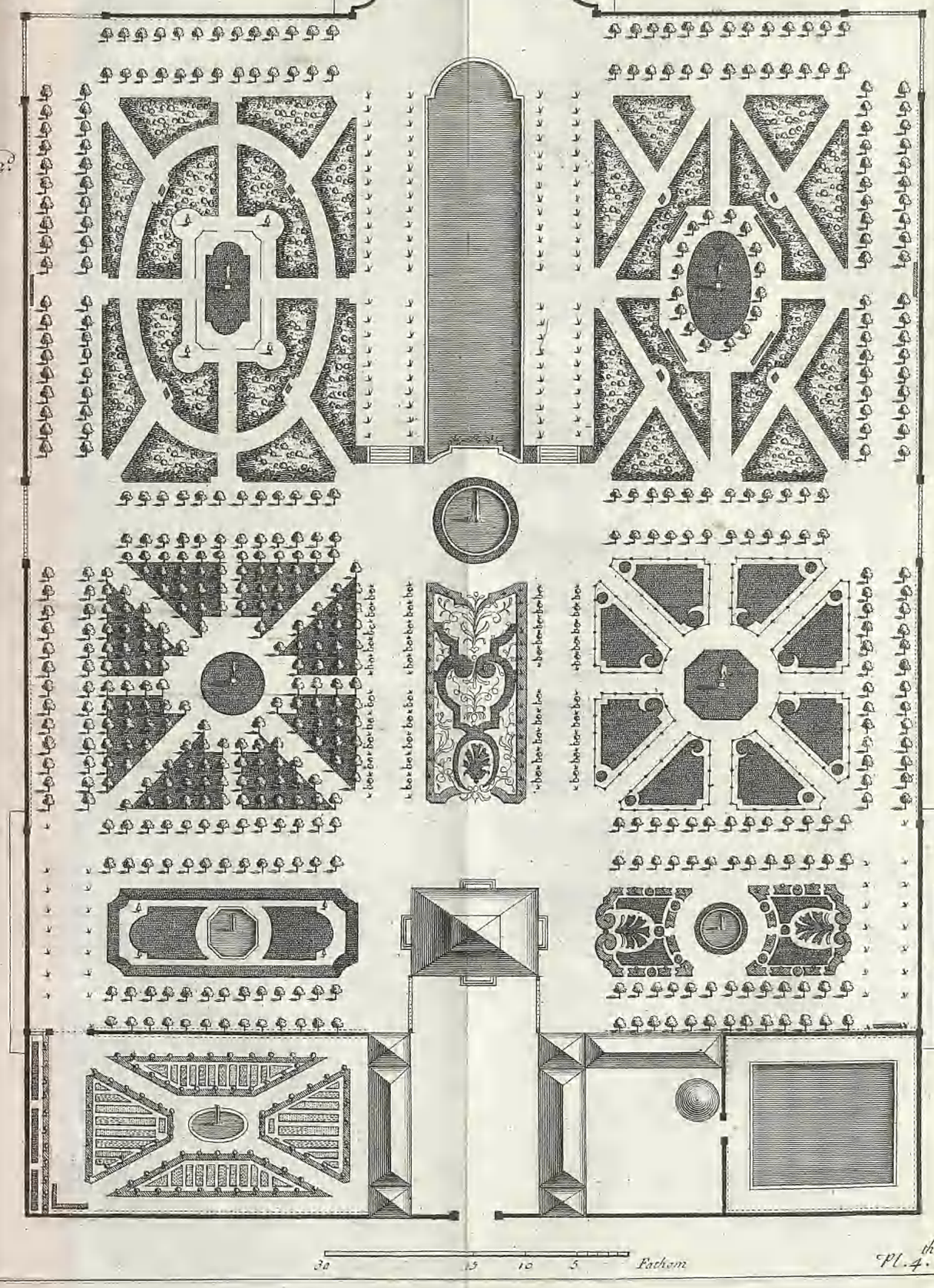
The general Disposition of a Garden of Six Acres.

fig:1st



The general Disposition of a Garden of Twelve Acres.

fig:2d



Pl. 4th A

and by two tall Woods, which inclose it very agreeably by the Variety and Richness of their Design.

THIS Disposition, tho' inferior in Bigness and Magnificence to those contained in the three first Plates, is not, however, the least considerable, for its happy Distribution, and for the Lines of the Walks you meet with in the Middle of the Groves, which terminate upon the Jets of the Bowling-green, and *English* Parterre, that are upon the Wings of the Building. All these Pieces are bordered by great double Walks, and by Palisades against the Walls, which are cut off by Grills answering the Lines of the Walks, or by Walls level with the Ground, and trenched; which make a noble Opening, as well at the End of the Canal, as against the two Sides of the Building.

Chap. IV.

Of Parterres and Borders of ſeveral Kinds.

Dictionary of the French *Academy.*

THE Name of *Parterre* has its Original from the *Latin* Word *Partiri, to divide*; and according to ſome, a Parterre denotes a flat and eaven Surface.

Menage, Richelet.

THE Compartiments and Borders of Parterres are taken from Geometrical Figures, as well right-lined, as circular, mix'd, *&c.* They take various Deſigns into their Compoſition, as branch'd and flouriſh'd Work, Palms, Foliage, Hawks-Bills, Sprigs, Tendrells, Volutes, Knots, Stalks, Ties, Chaplets, Beads, Husks, Cartoozes, Plumes, Compartiments, Frets or Interlacings, Wreaths, and Shell-works of Graſs, Paths, Borders, *&c.* And ſometimes to theſe are added the Deſigns of Flowers, as Roſes, Pinks, Tulips, and the like.

FORMERLY they put in the Heads of Greyhounds, Griffins, and other Beaſts, with their Paws and Talons; which had a very ill Effect, and made Parterres look very heavy and clouterly.

THE Deſigns we ſee now-a-days are quite different; and 'tis pretended, that to have Embroidery look well, it ſhould be light, regular, and not confuſed; which often occaſions the Falling into the contrary Fault to what they were in heretofore; and, out of a ſtudious Endeavour to make Parterres appear light and free, they make them utterly unfurniſh'd, and with an Embroidery ſo thin and meager, that it makes no Figure upon the Ground; but in four or five Years Time you are obliged to pull it up again, the Edgings of Box coming to touch and interfere one with another.

A juſt

A just Mean should be observed in Things of this Kind, equally avoiding too great a Slenderness, as well as too great a Massyness of Ornaments.

THERE are divers Sorts of Parterres, which may be all reduced to these Four that follow; namely, Parterres of Embroidery, Parterres of Compartiment, Parterres after the *English* Manner, and Parterres of Cut-work. There are also Parterres of Water, but at present they are quite out of Use.

PARTERRES of Embroidery are so called, because the Box wherewith they are planted, imitates Embroidery upon the Ground. These are the finest and most magnificent of all, and are sometimes accompanied with Knots and Scrolls of Grass-work. Their Bottom should be sanded, the better to distinguish the Foliage and Flourish'd-work of the Embroidery, which is usually filled with * Smiths-Dust, or black Earth.

PARTERRES of Compartiment differ from those of Embroidery, in that the same Symmetry of Design is repeated, as well in respect of the Ends, as of the Sides. These Parterres are made up of Scrolls and other Grass-works, Knots, and Borders for Flowers, with a little well-disposed Embroidery, which Mixture produces an Effect very agreeable to the Eye. The Ground of these should be very well made, and filled with Sand between the Leaves; the narrow Paths that separate the Compartiments, we usually distinguish with † Tile-shards powdered, or Brick-dust.

PARTERRES after the *English* Manner are the plainest and meanest of all. They should consist only of large Grass-plots all of a Piece, or cut but little, and be encompassed with a Border of Flowers, separated from the Grass-work by a § Path of Two or Three Foot wide, laid smooth, and sanded over, to make the greater Distinction. We give it the Name of *Parterre à l'Angloise*, because we had the Manner of it first from *England*.

* Mâchefer, i. e. *Dross, or Scales of Iron. Smiths-Dust is either the Scales beaten off at the Anvil, or Iron Filings.*

† *Fr.* Ciment, i. e. *powdered Tile, or Brick, mix'd with Lime, which makes excellent Mortar, and is used by the* French *in Works under Water.*

§ Sentier ratissé, *by which the* French *understand a Path raked over only, and not rolled, as 'tis generally translated, to comply with our Custom of Rolling, which is not so much used by the* French, *their Gravel rarely binding, as ours does.*

PARTERRES of Cut-work, tho' not ſo faſhionable at preſent, are however not unworthy our Regard. They differ from the others, in that all the Parts which compoſe them ſhould be cut with Symmetry, and that they admit neither of Graſs nor Embroidery, but only Borders edged with Box, that ſerve to raiſe Flowers in; and by means of a Path of convenient Breadth that runs round each Piece, you may walk through the whole Parterre without hurting any Thing: All theſe Paths ſhould be ſanded.

PARTERRES of Embroidery, being the fineſt, ſhould poſſeſs the principal Place, and lie next the Building: Thoſe of Compartiment ſhould accompany them; and the Parterres after the *Engliſh* Faſhion may ſerve to fill up the greater Spaces and in the Orangeries, and then we call it *Parterre d'Orangerie.* Thoſe of Cut-work are proper for ſmall Places where you would raiſe Flowers, and then 'tis called, likewiſe, *Parterre Fleuriſte.*

I HAVE already mentioned, that the proper Place for Parterres is near the Building, as they are the richeſt Pieces of a Garden; and their Breadth ſhould be that of the whole Extent of the Body of the Houſe, or ſomewhat more; as to their Length, they ſhould not exceed a juſt Proportion, but that the Eye being near the Building, may from thence diſcover all the Embroidery and Compartiments.

YOU may diſpoſe Parterres ſeveral ways, as the Place ſhall require; either by cutting them into two long Quarters repeated with an Alley between them, or making only one Square of Embroidered-work, with Walks upon the Sides; or cutting it by Diagonal Walks, in Form of S. *Andrew*'s Croſs; and ſometimes into Quarters arched at one End; of all which you have Examples in the following Plates.

IT muſt be obſerved, that at preſent large Yews, and the like Shrubs, are not made uſe of in Parterres, becauſe theſe differing very much from the Woods and Walks of tall Trees, that make the raiſed Works of a Garden, ſhould be flat, eaven, and diſengaged, as open Places; for when large Yews are ſet in it, a Parterre looks like a Wood, dims the Sight, and hides the Beauty of the Buildings that are uſually

near

near it. Yews and Shrubs therefore, on a Parterre, ſhould never be permitted to grow above four or five Foot high at moſt.

PARTERRES differ alſo from the other Parts of a Garden, in that they are generally finer at their firſt Planting, than afterwards; the Box ſpreading and varying ſomewhat from the graceful Contours of the Deſign, the Earth loſing its Level, and the Graſs ſometimes not preſerving its primitive Beauty: But theſe, indeed, are Things inevitable, notwithſtanding all the Coſt and Pains we can beſtow.

BORDERS ſerve to bound and incloſe Parterres, that they be not hurt by walking in them, and become very ornamental by the Yews, Shrubs, and Flowers, that are raiſed in them. Four Foot is uſually allowed for the Breadth of the leſſer, and five or ſix Foot for that of the larger Borders; and they are always laid with a ſharp Riſing in the Middle, being no way agreeable to the Eye when they are flat.

OF Borders there are four Sorts: The moſt common are thoſe that are continued about Parterres without any Interruption, and are wrought with a ſharp Riſing in the Middle, like an Aſs's Back, and ſet out with Flowers, Shrubs, and Yews.

THE ſecond Kind is a Border cut into Compartiment, at convenient Diſtances, by ſmall Paſſages, and is likewiſe adorned with Flowers and Shrubs, being raiſed in the Middle as before-mentioned.

THE third Sort of Borders, are all eaven and flat, without Flowers, having only a Verge of Graſs in the Middle, edged by two ſmall * Paths raked ſmooth and ſanded. Theſe are ſometimes garniſhed with Yews and flowering Shrubs, or with Vaſes and Flower-Pots ſet regularly along the Middle of the Verge of Graſs.

* Sentiers ratiſſés. *Vid.* *p.* 33.

THE fourth Sort of Borders are quite plain, and only ſanded, as in the Parterres of Orangery, and are filled with Caſes ranged regularly along the Borders, which, on the Sides next the Walks, are edged with Box; and on the other, with the Verges and Graſs-work of the Parterre. Sometimes Yews are planted between each Caſe, which makes the Borders look richer, and the Parterres much handſomer, during the Winter.

BORDERS are made ſtrait, circular, or in Cants, and are turned into Volutes, Scrolls, Knots, and other Compartiments.

* French Plates-bandes iſolées. *Borders that lie free and join to nothing.*

FLORISTS likewiſe make uſe of * Borders either detached or along Walls, which they encompaſs with Boarder-boards painted green, that are exceeding neat, and in theſe they raiſe their fineſt and choiceſt Flowers; but this is not to be looked for in large Parterres, where 'tis ſufficient to have them ſtocked with Flowers in their ſeveral Seaſons as they ſucceed one another, that nothing appear bare and naked.

'TIS the Cuſtom at preſent to diſcontinue the Borders upon the Ends next the Houſe, that the Shrubs and flowering Plants may not hide the Embroidery and Riſe of the Parterre, and that the Deſign may be the better judged of. Sometimes there are branched out of it Foliage, Palm-Leaves, and Shells ſporting among the Sand.

THE two firſt Plates repreſent, in large, the ſame Deſigns of Parterres, as thoſe deſcribed in little, in the firſt Plate of the general Diſpoſitions in the preceding Chapter.

THE firſt Plate that follows, is a large Parterre of Embroidery mix'd with Knots of Graſs-work, and environ'd with a Flower-Border ſet off with Yews and Shrubs. This Deſign, tho' entire, and not cut in the Middle, is here ſuppoſed to be repeated on the other Side, with a Counter-walk of flowering Shrubs and Yews, and a great Baſon at the End, which may be had when the Place is large enough. The Scroll that you ſee at one of its Corners, may poſſibly look ſomewhat extraordinary; but when you conſult the general Plan, *Chap.* 3. *Fig.* 1. from whence this is drawn, you'll ſee the good Effect it makes with what is repeated on the Corner of the Parterre of Compartiment that is by it. The angular Scroll may be thrown aſide, if you make uſe of this Deſign for a ſingle Square only, and its Place ſupplied by ſome other Ornament, making a Sweep at the Head of it for a circular Walk round the Baſon. The Knots and Scrolls of Graſs-work throw out all the Sprigs and Palm-Leaves of this Embroidery very naturally, which

diſcovers

discovers itself plainly to the Eye, by the Interruption of the Border upon the Fore-Part.

THE second Plate shews a long Parterre of Compartiment, with a Bason in the Middle, surrounded with a Border of Cut-work, as are those Borders likewise upon the Sides, where they proceed to join the Scroll-work of the other Borders that form the Compartiment. The rest of the Space is filled with Shells and Grass-plots, and the two Extremities with Cartoozes of Embroidery, which make a most agreeable Mixture. There also branch out small Sprigs and Husks from the several Scrolls of the Borders: The Ground of this Parterre is laid with Sand, and the Paths with * powdered Tile, or Brick-dust. It is accompanied with two Walks of Trees that stand detached, and four Vases at the Corners.

* *Fr.* Ciment. *Vide p.* 33.

THE Parterre of the third Plate is one of the most magnificent that are; 'tis in Compartiment, but can be put in Execution only in a large square Place. It consists of four Cartoozes of Embroidery in its Fronts, and Shells of Grass-work at the four Corners, all sanded with Variety of Colours, and edged with Lines of Box. In the Middle is a Bason surrounded with a Border of Cut-work, garnished with Yews and Shrubs, with Flower-pots set upon Plinths of Stone. The outer Borders are broke off in Front by each Cartooze, and at the Corners are turned into Scrolls. At the Foot of this Parterre is supposed a † Bank of Grass border'd above and below with a Row of Cases and Yews, having in the Middle a Descent of Steps with a Half-pace, adorn'd with Figures and Vases. The Proportions of the whole may be known by the Scale.

† *Fr.* Talus, *by which the* French *understand such a Slope as the Outsides of those Walls have, which resist great Weights of Earth. A Slope that lies under the Diagonal of a Square, or less than* 45 *Degrees, they term* Glacis.

THE fourth Plate contains a Parterre of Embroidery cut into two Squares repeated, and varied two ways. There is a Walk in the Middle that leads to a Bason, beyond which is a Goose-foot cut in a Wood. Of the two Compartiments, you may choose which you think most proper. I shall say nothing here of their Composition, the Explanation I have already given of the Parterres that went before, being a sufficient Instruction for this also.

THE

THE fifth Plate lays before you a Parterre of Embroidery of a very new Contrivance. 'Tis a large Square, arched at one End, with a Baſon beyond it. The Middle is filled with Embroidery and Knots of Graſs-work, with a Border about it, which is wholly cut away in the Front next the Houſe. It has nothing in it uncommon but at the Ends; at one of which there are two Dolphins-Heads turned into Scrolls, from which the Paths and Knots of Graſs begin and take their Riſe. The other End is adorned with the Mask-Head of a Griffin, having Bats Wings, formed by the Sides of Graſs-work, as the Flouriſhes of the Embroidery form the Noſe, Eyes, Brows, Muſtaches, and Tuft upon the Head of the Mask. Its Cravat, or Rib, is expreſs'd by a Shell of Graſs-work. Sands of various Colours very much contribute to prevent Confuſion in theſe ſmall Compartiments, which perform Wonders upon the Ground when well executed. There are already made two or three Parterres of this Kind.

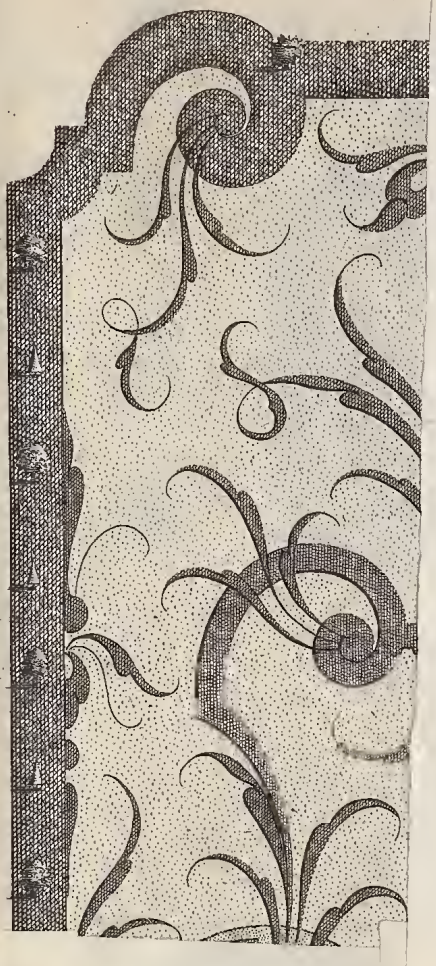
THE ſixth and laſt Plate is the moſt filled, and contains three Deſigns of Parterres, each of a different Kind. That of the firſt Figure, is a *Parterre à l'Angloiſe*; that is to ſay, all Graſs-work caſt into ſeveral Compartiments, and encompaſſed with a Border of Flowers cut in ſeveral Places, and garniſhed with Yews and Shrubs. This Deſign, tho' nothing but Graſs-work, is however very rich for what it contains.

THE Parterre of the ſecond Figure is all Cut-work. It is near ſquare, and is arched at the End for a Baſon, having its Corners hollowed out, and ſet with Yews. It is compoſed of a long Oval in the Middle, and of Cartoozes at the four Corners with Knots and Shells, all cut in ſeveral Pieces, forming Borders that are adorned with Flowers and Shrubs regularly placed. All theſe Pieces are encloſed with Edgings of Box, and a broad * rolled Path leads you round them, without hurting any Thing. There is alſo a narrow Path about the Oval, and about each Cartooze, which ſhould be covered with red Sand.

* Sentier ratiſé. *See p.* 33.

THE third Figure ſhews, how very fine a ſmall Parterre of Orangery may be made. 'Tis a long Square, rounded at

arterre of Imbroidered Work mixt



Parterre of Imbroidered Work mixt wth Knots of Grass

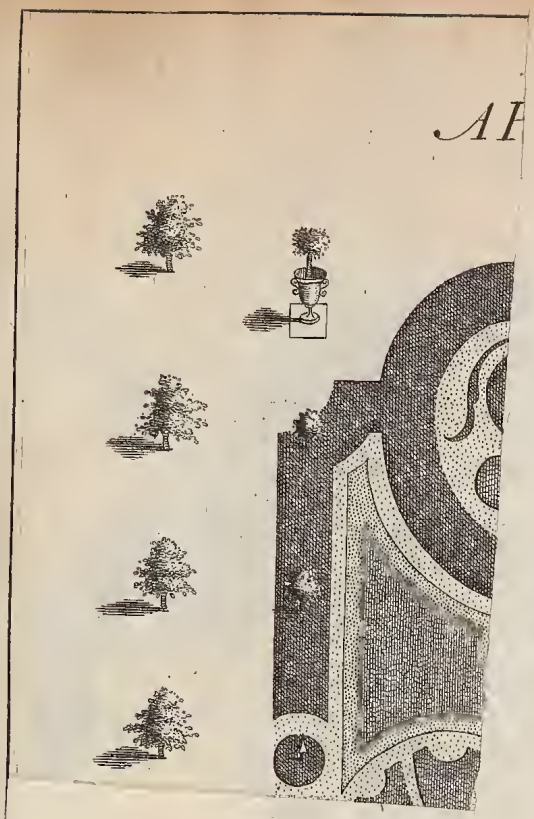
1 2 3 4 5 10 Fathom.

8.

Pl: 1st. B.

M. Vdr Gucht Scul.

* Sentier ratiſſé. *See p.* 33.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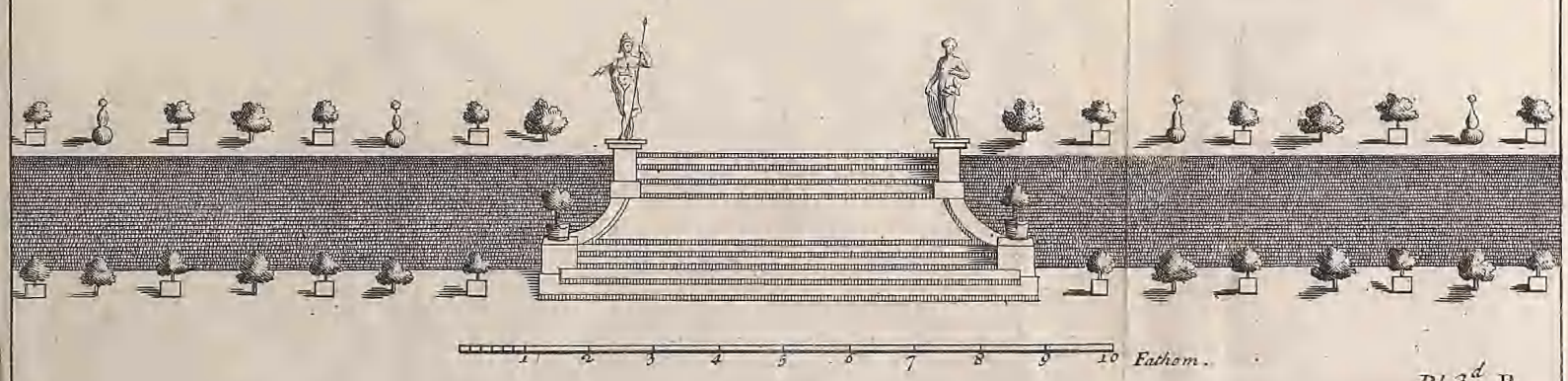
A Parterre of Compartiments.

Pl: 2d B.

M. Vde Guchet Scul.

* Sentier ratiſſé. *See p.* 33.

A large Parterre of Compartiments.



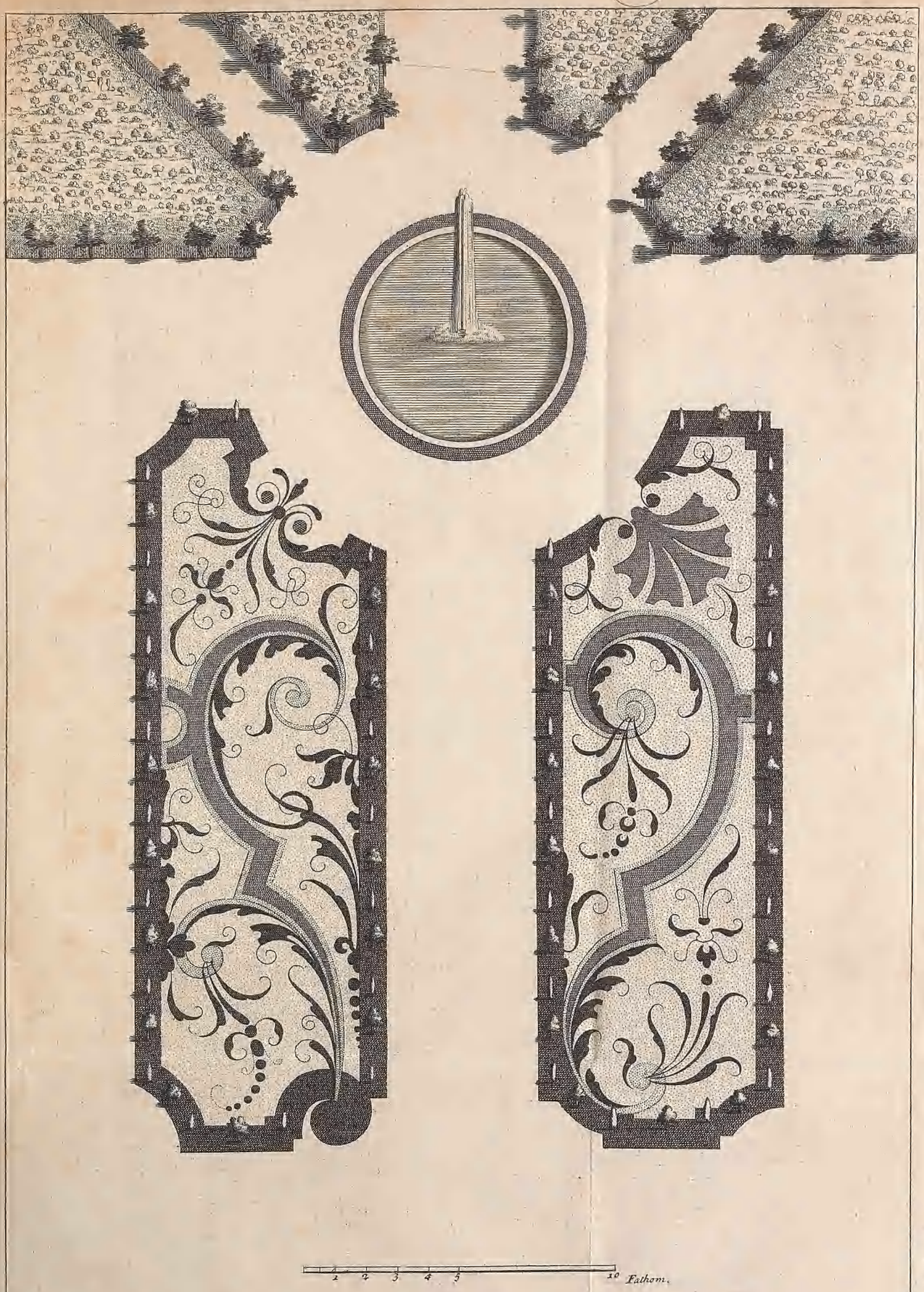
Pl. 3d. B.

M. Vdr Gucht Scul.

* Sent
tissé. S

A Part

A Parterre of Imbroidered work varied two ways.



Pl. 4th B.

M. Vdr Gucht Scul.

* Ser
tiffé.

al.

A Parterre of Imbroidery of a very new Design

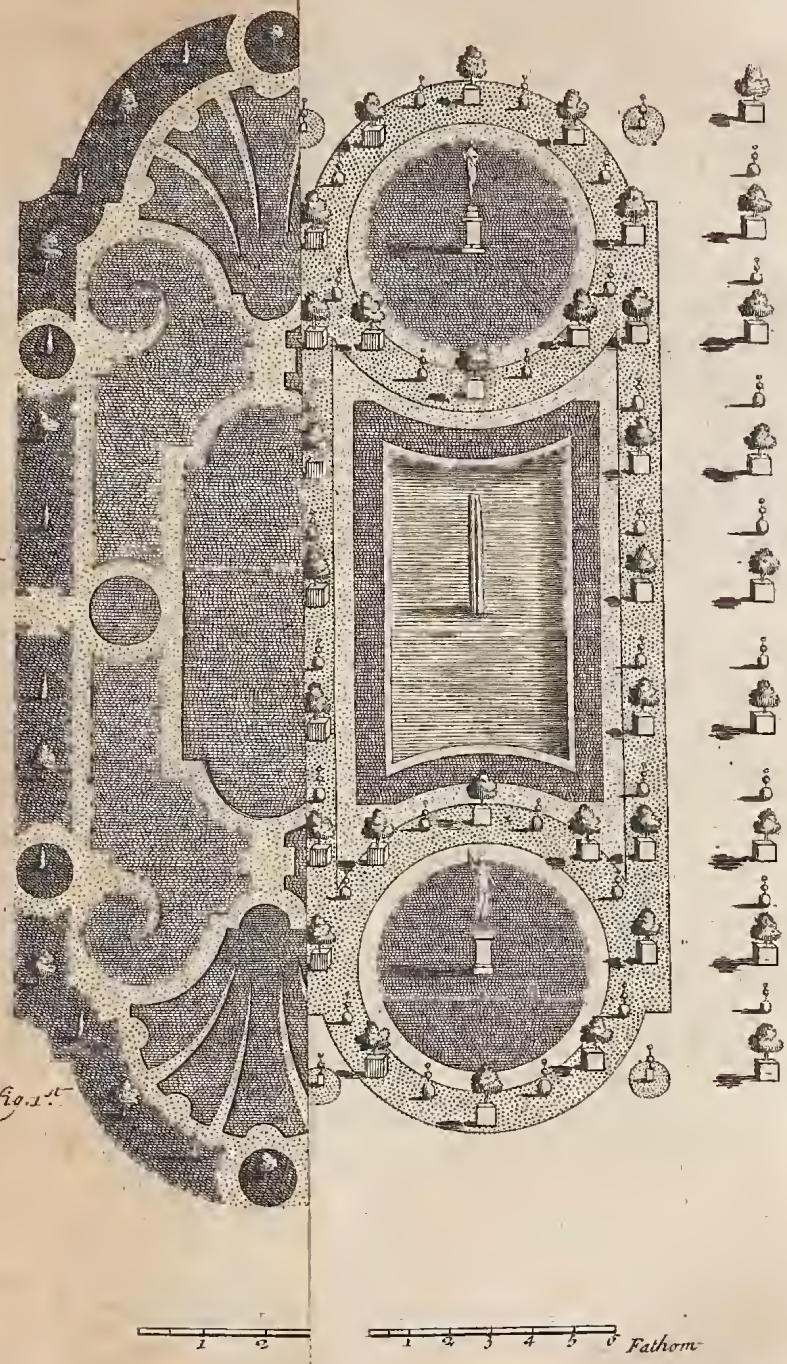
1 2 3 4 5 Fathom

Pl. 5th. B.

M. Vdr Gucht Scul

* Se
tiſſé.

A Parterre after y^e E Parterre of Orange Trees.



Pl. 6th B.

M V^dr Gucht Scul.

A Parterre after ye English manner.

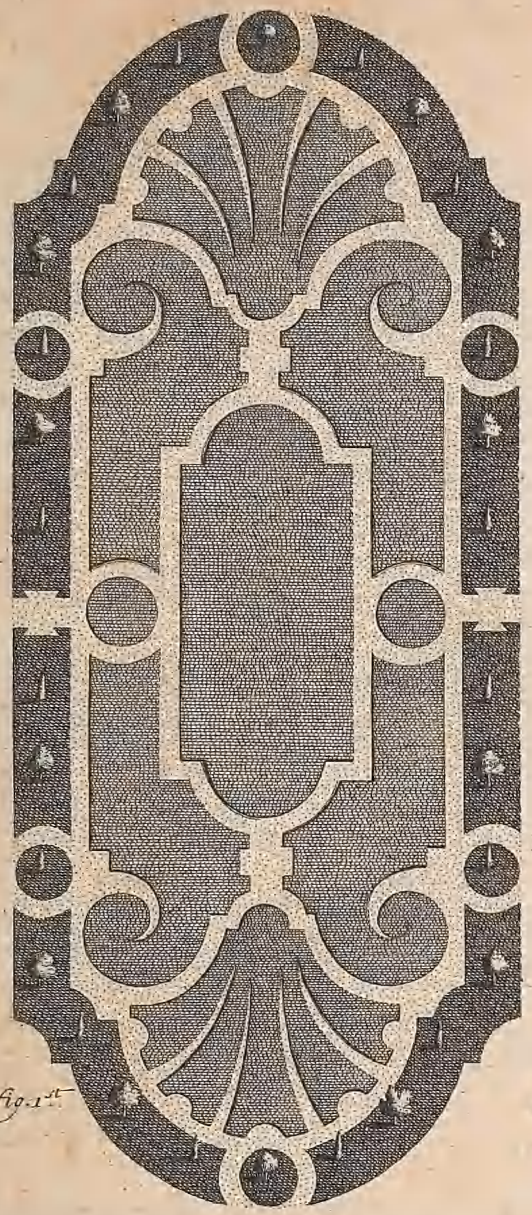


fig. 1st.

1 2 3 4 Fathom

A Parterre of Cutwork for Flowers.

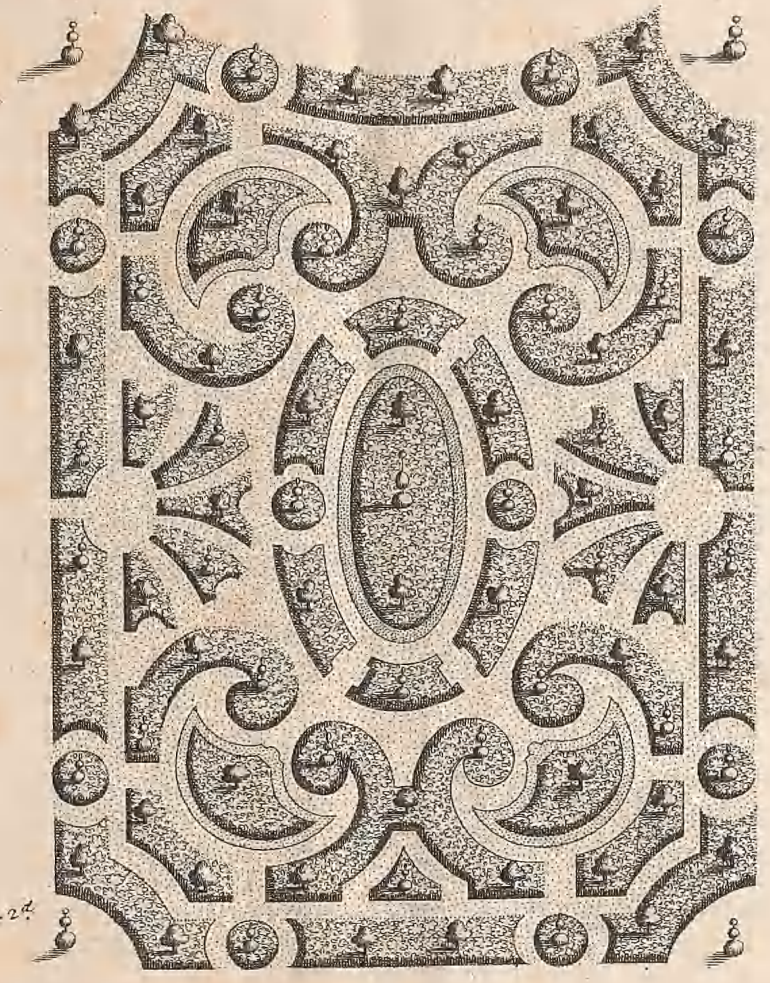


fig. 2d.

1 2 3 4 5 6 Fathom

A Parterre of Orange Trees.

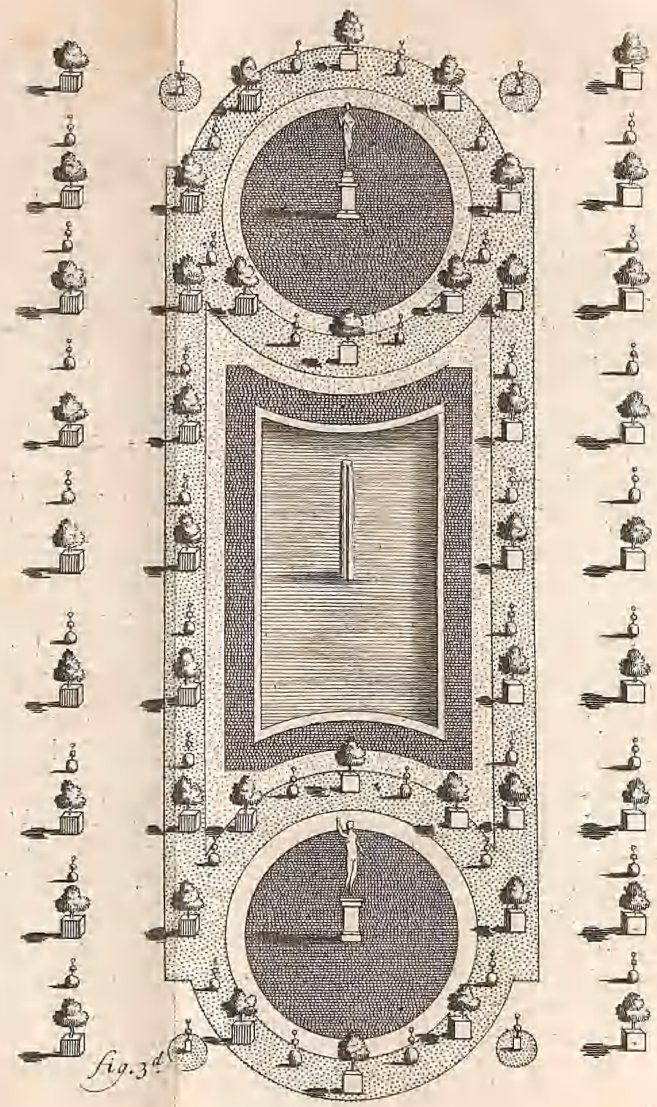


fig. 3d.

1 2 3 4 5 6 Fathom

Pl. 6th B.

M. Vdr Gucht Scul.

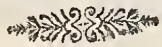
at each End, and filled in the Middle with a ſmall Piece of Water, and two round Graſs-plots with Figures, which finiſh the Portions of the Circles. Theſe three Compartiments are encompaſſed with a Path and Edging of Box, which, with that on the Outſide, makes Borders that ſurround the Graſs-plots alſo. Theſe Borders being ſanded, and all ſmooth and eaven, are ſet out with Yews; between which are placed Caſes of Orange-Trees, Jaſmins, Myrtles, Laurels, *&c.* which ought to range in a Line with thoſe of the two Rows on the Sides.

YOU muſt not fail to have Sand for theſe Parterres of different Colours, for 'tis this makes the great Beauty of them. You may employ * powder'd Tile, or Brick-duſt, for the red; black Earth, Iron-Filings, or Smiths-Duſt, for the black; and common Sand, or Gravel, for the white and yellow.

* *Fr.* Ciment. *See p.* 33.

THAT you may know, by the Plates, what Places are to be filled with red, black, or yellow Sand; you are to obſerve, that the Points more diſtant from each other, denote the common Sand, or fine Gravel; and thoſe that are ſmall and cloſer together, as in the Paths about the Knots of Graſs-work, expreſs red Sand, or Brick-duſt. The Inſide of the Branch-work in the Embroidery, is filled with Iron-Filings, Smiths-Duſt, or black Earth, which you may underſtand by the Lines croſſing one another. The Graſs of the Knots and Shell-works, is diſtinguiſhed by the Right Lines intermixed with ſmall Points.

EACH Parterre has its particular Scale, by which you may know the Extent and Dimenſion of all the Parts which compoſe it. You may nevertheleſs alter the Proportions, widening, lengthning, or diminiſhing theſe Parterres, as the Place ſhall require; but this Enlarging or Diminiſhing ſhould be made with Diſcretion, and ſhould not be very conſiderable, as one Half, becauſe that would change the whole Deſign, and utterly ſpoil the Grace of it. In this you ought to conſult Perſons of Skill, and of a good Taſte; for very often, of a good Deſign, there is made a very bad one.



CHAP. V.

Of Walks, Counter-walks, and Paliſades.

WALKS in Gardens, like Streets in a Town, ſerve to communicate between Place and Place, and are as ſo many Guidances and Means to conduct us throughout a Garden: Beſides the Agreeableneſs and Convenience they conſtantly afford in Walking, they make one of the principal Beauties of Gardens, when they are well executed and well kept.

AMONG the ſeveral Sorts of Walks, I ſhall take Notice of the Cloſe and the Open, the Single and the Double.

THE Cloſe are thoſe formed by Trees or Paliſades, which joining together at Top, ſhut out even the Sight of the Sky, and by their Obſcurity give a Coolneſs not penetrable by the greateſt Heat of the Sun.

THE Walks you would have cloſe or covered, ſhould be made narrower than others, that the Trees may the ſooner meet and join together over Head. Theſe Walks are very delightful in hot Weather, when you may walk under the Shade of them in the very middle of the Day.

OPEN Walks may be diſtinguiſhed into two Kinds; namely, the Alleys of Parterres, Bowling-greens, Kitchen-gardens, *&c.* which are formed only by the Yews and Dwarfs of the Borders; and the Walks, which tho' planted with high Paliſades and tall Trees, are however kept open at Top, either by clipping the Paliſades to a certain Height, or by trimming the Trees on both Sides, ſo that you may breathe the pure Air.

'TIS

'TIS a general Rule to keep open the principal Walks, such as those that face a Building, Pavilion, Cascade, or the like; and these likewise should be kept wider than the others, that from the End of the Walk you may see Part of the Front of a House, or some other handsome Object; for there is nothing so disagreeable in a Walk, as when from the End of it, you can scarce see the Door of the Vestibule of a Building. There is no need to let any be covered but Counter-walks, for forming two green Arbors; and Alleys in Places of less Consequence, where there is no valuable Prospect.

The great Walk of the Tuilleries *is so close, that you can scarce see the Door of the great Pavilion from the End of it, which is a very great Fault, and is occasioned by the ill Planting of the Horse-Chesnuts.*

SINGLE Walks are those that consist but of two Rows of Trees or Palisades, to distinguish them from double Walks that have four, which form three Alleys close together, a large one in the Middle, and two on the Sides that accompany it, and are called Counter-walks. The two middle Rows should be planted with * Trees detached, that is to say, not shut up with a Palisade, but free, that you may go round them; and the two other Rows should be filled up and edged with Palisades. As double Walks are the most esteemed, so they are generally made to possess the finest Parts of a Garden.

* Arbres isolés.

As to the Names and different Figures of Walks, they may all be included in these that follow: The Parallel-walk, the Strait-walk, the Cross-walk, the Winding or Circular-walk, the Walk returned square, and the Diagonal or Thwart-walk, in respect of that at Right Angles.

WALKS may also be distinguish'd into two Sorts, in regard of their Situation; those upon a Level, and those that lie with an easy Descent. 'Tis very rare that a Walk is perfectly level, there is generally made a small insensible Slope for carrying off the Water; however, there are some entirely level, as the Walks of a Mall, and those about a Parterre or Piece of Water: But then, to discharge the Wet that might otherwise gutter the Walks, draining Wells should be made, at convenient Distances, of Flint and dry Stones.

WALKS upon a gentle Rising are most usual, and should be made so as not to incommode one in Walking, by their Ascent, which should be scarce perceivable; for when they

are too ſteep, they offend the Eye, and are very tireſome to the Foot: Their Riſe ſhould ſeldom or never exceed three Inches in a Fathom, leſt the Walk be ſpoiled by the Torrents of Water. This is the beſt Rule you can follow to make them well; but when the Ground will not admit of it, and you are obliged to a much quicker Fall, as in a Walk that leads down by the Side of a Caſcade; you may then help this great Steepneſs by certain Reſts and Steps of Graſs laid in * *Zic-Zac*, and called by the *French*, *Chevrons*, which croſs the Walk obliquely from Side to Side; or elſe, by ſmall Stops made of Ship-plank, which riſing about two Inches above the Walk, check the Water, and turn it off upon the Sides, by which means the Walk may be kept neat, and in good Order.

* *The* French *call this an* Allée en Zic-Zac, *for its Likeneſs to a Machine ſo called, which conſiſting of many Pieces, every two croſs one another like an* X, *moving on a Pin at their Center, and at their Extremities faſtened with Points to the Ends of others that meet them, which forming ſeveral Lozenges, are very much extended, or very much contracted at one Motion, like that of the Opening of a Pair of Cizars. See the laſt* Plate, *Fig.* 1.

FOR draining the Ground, you ſhould obſerve to keep the middle Part of a Walk ſomething the higheſt, that the Water running off to the Sides, may not have Time to ſpoil the Level of the Walk; by this means likewiſe it will become uſeful, and ſerve to water the Paliſades, Borders, and Trees upon the Sides.

The Breadth of Walks ſhould be proportioned to their Length, for in this lies their greateſt Beauty. We have had Perſons of great Ability in Gardening, who have failed of this juſt Proportion, and given Walks too much Breadth for their Length. One may fall alſo into the contrary Fault, and make them too narrow. If, for Inſtance, a Walk of 600 Foot long were no more than twelve or eighteen Foot wide, it would be very defective, and appear but like a Gut; whereas had it been thirty or ſix and thirty Foot wide, it would have looked very handſome and well proportioned, ſuppoſing it ſtill to be ſingle: So Walks of 1200 Foot long, ſhould have their Breadth from forty two Foot to forty eight Foot: Thoſe of 1800 Foot long, from fifty four Foot to ſixty Foot; and thoſe of 2400 Foot, or near half a Mile long, from ſixty to ſeventy two Foot. This is very near a juſt Proportion for Walks that are not double; for in ſuch caſe they ſhould have near twice the Breadth here mentioned, including the Counter-walks.

THESE

THESE are the Obſervations I thought good to make, in relation to the Breadth of Walks that are bordered, or of young Paliſades, that by their Height will one Day ſtreighten and contract the View, and ſo make the Walk too narrow; or elſe the Paliſades, or Trees on the Sides, coming to garniſh and grow thicker, will in Time poſſeſs two Foot of a Side, which is no way then to be prevented, though it ſtreighten a Walk very conſiderably. Theſe Remarks, how mean ſoever they appear, ſhould engage the Men of this Profeſſion to conſider what their Walks will be hereafter when they are grown up, rather than what they are at preſent; for an old Plan is very different from a new one; and the Allowance of a little more Breadth at firſt, would prevent all theſe petty Inconveniencies.

YOU are under no Obligation to obſerve theſe Rules in ſuch Places, where the Length of the Walks, prolonged as far as is poſſible, can yet never be too long.

THE moſt uſual Proportion of Double-walks, is to give half the general Breadth to the Middle-walk, and to divide the other half into two for the Counter-walks, which ought to be anſwerable to the great one. For Example, in a Walk of forty eight Foot wide, you ſhould give twenty four Foot to the Middle-walk, and twelve Foot to each Counter-walk: In one of ſeventy two Foot, thirty ſix Foot to the Middle-walk, and eighteen to each Counter-walk; and in one of ninety ſix Foot, forty eight Foot to the Middle-walk, and twenty four Foot to each Counter-walk. If the Ground confines you, you may take off three Foot at moſt from the Breadth of the Counter-walks, now calculated in Double-walks, that front a Building, or a Caſcade, making the Middle-walk ſo much wider as you leſſen the Counter-walks, that the Beauty of the Proſpect may be better diſcovered from the End of the Walk.

I CAN by no means approve of the Double-walks, whoſe Counter-walks varying from this Rule are ſo narrow, that two Perſons can ſcarce go abreaſt in them. For which Cauſe I ſhall add, that there ought to be about three Foot Breadth allow'd to a Man, ſo that in ſix Foot two Perſons may walk abreaſt very well; and conſequently, in a Walk

As the great Walk of Horſe-Cheſnuts of Luxembourg.

of twelve Foot wide, four Persons may go without justling one another.

As to the Alleys of Groves that are far distant, as upon the Extremity of a Park, or the like, which have no Vista, nor answer any principal Line, it is no way necessary to make them so wide, being in Places less frequented, and more rarely exposed to Sight.

ONE of the greatest Charges of a Garden is the Walks, Grass being continually subject to grow in them; upon which Account the Gardener should take great Care to keep them always clean and free from Weeds. In small Walks they generally use an Edging-Iron or Hough; and in our large Walks in *France* they make use of a Plough, raking the Ground afterwards very smooth, and sweeping off the Leaves and Dirt, as Occasion requires. All that needs to be observed in this Work, is, to choose the most proper Time for doing it, not too dry a Season; for then the Ground is so hard, that you would only cut off the Tops of the Weeds, and leave the Roots behind, which would shoot again with greater Vigour; nor must it be too wet, lest in cutting the Roots you raise the Earth or Gravel that is next them, and spoil the Walk.

The most difficult Weeds to destroy with us in France, *are Quick-grass and Bind-weed, by reason of the long Roots they shoot into the Earth.*

TO avoid the great Charge of Walks that are very wide, and would take up too much Time to hough and rake, we usually make a Grass-walk in the Middle, and keep it in Order by often mowing.

FOR what relates to the Manner of setting out and leveling Walks, I refer the Reader to the Second Chapter of the Second Part that follows, where it is amply treated of. And so I do for the Method of planting and raising the Trees and Palisades of Walks, which is shewn in the Sixth and Seventh Chapters of the same Part.

I COME now to speak of the laying of Gravel, and of beating the Walks, which is the surest Way to prevent the Growth of Weeds in them, and to hinder the running of Moles, which are sworn Enemies to Gardens; for which Evil, as also for other Insects and Vermine, you will find a Remedy in the Seventh Chapter of the Second Part. The best way to gravel Walks, is to make a Bed of Masons Rubble,

Rubble, or Stone-duſt; thus, in the room of the Earth you take out, lay at the Bottom 7 or 8 Inches Thickneſs of the coarſer Stone or Gallets, and upon that about two Inches Thickneſs of the fineſt Duſt that has been run through a Skreen; let this be beaten three ſeveral Times with the Beater, after having been well watered each Time, and then ſpread the Gravel upon it, which alſo ſhould be well beaten. When you lay a Bed of Salt-petre over this Maſons-Duſt, as is done in making a Mall, or Bare to bowl on, it ſhould be beat eight or nine times; and in caſe Maſons-Duſt cannot be had in the Country, you may take coarſe Gravel and Pebbles, and lay them at Bottom with a Bed of Earth upon them to make a Body, and then throw on the Gravel, beating it as before.

Moſt of their Walks in France *are laid with a Gravel, or Sand, that binds not as ours in* England; *but is looſe, and conſequently will not bear the Roll, as our Walks generally do.*

THIS Way of Graveling and Beating Walks is very chargeable; and therefore for private Perſons it may ſuffice to beat the Ground well, and then ſpread the Gravel on it, after which the Rain will contribute to finiſh and harden the Walks, which ſhould not have too great a Depth of Gravel, that they be not tireſome, and require long Beating; two Inches Thickneſs is generally enough for the Purpoſe.

AS there is no Rubble in theſe Walks, and that the Earth is very near the Gravel, Weeds grow faſter in them than in others; beſides, with much houghing and raking, the Earth mingles with the Sand, and, by this Mixture, all becomes as it were pure Earth again.

THERE are two Sorts of Gravel or Sand made uſe of in *France*, River-Sand, and Pit-Sand.

RIVER-SAND is by us eſteemed the beſt and moſt beautiful. It ſhould be choſen ſomewhat groſs, not too fine, nor too ſtony; and above all, it ſhould be heavy, that the Wind may not ſo eaſily diſturb it. This we paſs through a Skreen, or coarſe Sieve, to clear it of the larger Stones, and to render it the handſomer.

PIT-SAND, ſo called, becauſe it is drawn from Sand or Gravel-pits, is alſo very good for the Purpoſe, and is made uſe of in Places remote from Rivers.

WHAT I am going to ſay here, upon the Subject of Paliſades, relates not to the Manner of Planting them, which I re-

I reſerve to be ſpoken of hereafter. All that I ſhall do now, is only to ſay one Word of their Beauty, and the different Forms that may be given them.

PALISADES, by the Agreeableneſs of their Verdure, are of the greateſt Service in Gardens, to cover the Walls that incloſe the Ground, to ſhut up and ſtop the Sight in many Places, that the Extent of the Garden be not diſcovered at one View, and to correct and recover the Levelings and Elbows of Walls. They ſerve alſo to incloſe and border the Squares of Wood, to divide them from the other Parts of the Garden, and to prevent their being enter'd but by the Walks made for that Purpoſe.

THE moſt uſual Form of Paliſades is a great Length and Height, entirely ſmooth and eaven, making as it were a great Wall or green Tapeſtry; all the Beauty of which conſiſts in being well filled up from the very Bottom, of no great Thickneſs, and handſomely clipped on both Sides, as perpendicularly as poſſible.

BUT in Groves, and ſome particular Places, as Cloſe-walks, Galleries, and Halls made within the Squares of a Wood, Paliſades are often cut into Arches, which have a very handſome Effect. To give the Arches a juſt Proportion, their Height ſhould be twice their Breadth, and Balls or Vaſes may be made on the Head of each * Peer; the Vaſes are formed by Shoots of Horn-beam riſing out of the Paliſade, which ſhould be carefully raiſed and clipped with Art, to bring them to a proper Shape. This Decoration compoſes a kind of Order of Rural Architecture, like that we call the *Ruſtick Order* of a Grot or Caſcade. The Arches here mentioned ſhould not be cut to the Bottom of the Walk, but a Hedge or Paliſade Breaſt-high ſhould run round about, except in the Lines of the Alleys, where there muſt be Openings and Paſſages of Communication.

* Trumeau, i.e. *the Space between Arch and Arch.*

YOU may likewiſe, at proper Diſtances, make Niches and Sinkings in the Paliſades, for the placing of Seats and Figures, as in Groves, and at the Ends of Walks, which indeed is the greateſt Advantage of Paliſades; for their Verdure ſerving as a Ground to the Figures, Vaſes, Fountains, *&c.* it infinitely raiſes their Beauty, makes them look more free and detached, and mightily improves them by the Oppoſition it produces.

PALI-

PALISADES are trimmed after divers Fashions, into Fans, Curtains, * low Hedges, *&c.* according to the Nature of the Place, and the Intention of the Person that gives the Design, who proposes therein certain Figures, which require Time e'er they can be brought to Perfection.

* Banquettes *are properly Causeys raised above the Cartway, for Foot-Passengers; but the Word is used in Gardening for a low Hedge.*

THOSE we call Fans and Curtains, are no other than large and very high Palisades, which serve to stop the Sight, to shut up Places that are disagreeable, or to sever the Parts of a Garden.

AS for those we call *Banquettes*, they are low Palisades Breast-high, ordinarily not exceeding 3 or 4 Foot; they are of use on the Sides of Double-walks, where, being kept so low, they are no Hindrance to the enjoying of a pleasant Prospect through the Trees.

IN heading a Palisade, and the Trees that are near it, you may also form Niches and Natural Close-Arbors, without making use of any Trellis or Latticed-work. These, I think, are the best Improvements you can make in the Business of Palisades; heretofore, indeed, they were wont to give them a thousand extravagant Forms, which are still very common in the Gardens of *Italy* and *Spain*: But at present, in *France*, they run no more upon such Trifles, but choose rather a Regularity plain and less confused.

TO preserve the Beauty of Palisades, you should observe not to let them run too high, for fear they grow bare and naked towards the Bottom: Their Height may be two Thirds of the Alley, where they should be stopped, and afterwards kept sheared, as well at Top as on both Sides, by the Help of tall double Ladders and Rolling Carriages, and always as short and close as possible; for nothing looks worse than a Palisade too thick, besides that it infallibly brings it to Ruin in little Time.

NEVERTHELESS, if there be occasion to raise Palisades very high, as sometimes happens in joining the Heads of the tall Trees that are set within the Palisade, with the Palisade itself, which would certainly unfurnish it at Foot; you may then supply the lower Part with Box and Yews, supported by a small Trellis of five or six Foot high, as is to be seen in many Gardens.

Versailles, Marly, S. Cloud.

CHAP.

CHAP. VI.

Of Woods and Groves in general.

THIS Chapter contains all that is moſt noble and agreeable in a Garden, namely, Woods and Groves; for no Garden without theſe can be accounted handſome, ſince they make the greateſt Ornament thereof. Woods, in the Summer-time, are the greateſt Relief againſt the violent Heats of the Sun; and the cloſe Parts of them afford a Shade to walk under, even at Mid-day. In large Gardens we always meet with many of them; and there is ſcarce any Garden ſo little, but has a Grove, or ſome cloſe Walk in it.

SINCE it may then be taken for granted, that Woods are the eſſential Part of a Garden, 'tis certain, that a Country-Seat without them is defective in one of its principal Particulars.

THE *French* call a Grove *Boſquet*, from the *Italian* Word *Boſquetto*, a little Wood of ſmall Extent, as much as to ſay, a Noſegay, or Bunch of Green.

WOODS and Groves make the *Relievo* of Gardens, and ſerve infinitely to improve the flat Parts, as Parterres and Bowling-greens. Care ſhould be taken to place them ſo, that they may not hinder the Beauty of the Proſpect; for it frequently happens, that one is obliged afterwards to grub them up, or to keep them headed very low, out of the Concern one has for the Loſs of a pleaſant Proſpect; as I have already obſerved, in ſpeaking of the general Diſpoſition of Gardens.

FOR what relates to their Form and Deſign, they may be varied different ways, keeping it as a general Rule, to pierce them with Alleys as much as poſſible, not making

ſo

so many Works and Returns in them, as to waste the whole Area of the Wood; nor so few, as to leave great Squares of Wood naked, and without Ornament. Their most usual Forms are the Star, the direct Cross, S. *Andrew*'s Cross, and the Goose-Foot; they nevertheless admit of the following Designs, as Cloisters, Labyrinths, Quincunces, Bowling-greens, Halls, Cabinets, circular and square Compartiments, Halls for Comedy, Covered Halls, Natural and Artificial Arbors, Fountains, Isles, Cascades, Water-Galleries, Green-Galleries, *&c.*

YOU should always observe to make something Noble in the Middle of a Wood, as a Hall of Horse-Chesnuts, a Water-work, Cascade, or the like; and in Places of this Kind, the Walks should be somewhat wider than ordinary. If those of other Parts of the Wood have twelve Foot in Width, the Middle Walks should have eighteen, or four and twenty; and when there is a Water-work, you should avoid making Double-Walks about it, that the Water may be seen the more agreeably, and the Place be render'd more dry and wholsome.

THERE are Woods of divers Kinds, which may all be reduced to the six following: Forests, or great Woods of high Trees; Coppice-Woods, Groves of a middle Height, with tall Palisades; Groves opened in Compartiments, Groves planted in Quincunce, or in Squares, and Woods of Ever-Greens.

THE two first Kinds, which are Forests of tall Trees, and Coppices, are proper only in an open Country, or in a Park of six or eight Miles over. Yet, that nothing be omitted, I shall speak of these, as well as of the other Groves following, which are those which most concern our Pleasure-Gardens.

FORESTS, and great Woods of tall Trees, are so called, because of their Height, and considerable Extent of Ground. Such we count those that are at least a League, or many * Acres in Compass. They consist of great Trees very high, and very close one to another, which form a very thick tufted Head. These Woods have no Palisades nor rolled Walks in them, only Ridings cut for Hunting: They are usually

* *The* French *Acre is* 1800 *Foot long, by* 18 *Foot broad. When they speak of it as a Lineal Measure, they mean* 1800 French *Foot, which is equal to about* 1920 *Foot* English.

usually planted in a Star, with a large Circle in the Middle, where all the Ridings meet. These Woods are wild and rural; as the Forest of S. *Germain en Laye*, that of *Fontainebleau*, of *Senlis*, the *Bois de Vincennes*, *de Boulogne*, &c.

COPPICE-WOODS differ nothing from those before-mentioned, but in that they are not suffered to grow so high, and are cut down to the Ground every nine Years, upon which Account the *French* call them *Bois Taillis*. They divide a hundred Acres of this Wood into nine Parts, one of which is cut down every Year; by which means the Wood is preserved from Waste and Ruin, one Side growing up, while the other is cut. By the Statute they are obliged to leave sixteen Tillers on an Acre, besides the old Standers left at the other Cuttings, which, in Process of Time, makes a Coppice-Wood become a Forest.

WOODS of a middle Height with tall Palisades, which the *French* call *Bois Marmanteaux*, or, *de Touche*; and the three other Kinds that follow, are those which are made use of in fine Gardens, and are truly the Groves of Delight and Delicacy: They are styled of a middle Height, because the Trees wherewith they are planted, never arrive to the great Height of the Forest-Trees, scarcely exceeding thirty or forty Foot high. These Woods are adorned with Halls, Cabinets, Galleries, Fountains, *&c.* Their Squares are edged with Palisades and Lattice-work, and their Alleys are handsomely made, and well gravel'd, which renders them very neat and curious.

THE Groves that are open, and in Compartiments, which some call *Bosquets Parés*, or Embellish'd-Groves, differ from other Woods, in that there are no Trees planted in the Middle of their Squares to form any Thicket or Under-wood, but they are left open; their Alleys are planted with Lime-Trees or Horse-Chesnuts, pursuant to the Design, and set with a low Palisade kept trimm'd to about three Foot, or Breast-high, which renders all the lower Part of the Grove free and disengaged, and, in walking, gives you the Advantage of the Prospect, and a Sight of Persons that are in the other Walks, which can't be done in the common Woods, where the Palisades and Under-wood grow very high.

In

In the Squares of these Woods are made Compartiments and Green-plots, with a rolled Path of two Foot wide running every-where between the Palisades and Grass-work, which are adorned with Yews and Flowering-Shrubs regularly planted. Designs of this Sort are the most beautiful and most magnificent that can be, and are a kind of real Parterres, partaking of those after the *English* Manner, and them of Compartiment, and still retaining something of the Wood. You may make in them Cabinets and Halls, with Lines and Vistas for Communication between one and the other.

GROVES planted in Quincunce are no other than several Alleys or Rows of tall Trees planted checker-wise, or at Right Angles, or else in Parallel Lines, without any Brush-wood or Palisades. They are called Quincunces, because of the Conformity they bear to the Cinque-Points of a Die, or to the Five on the Playing-Cards: Under these Trees the Ground is kept rolled or laid with Turf, leaving only certain Alleys in the Middle, and some small * Cabinets and Vistas, all which being without Palisades, you should have every way a Prospect of Walks planted exquisitely strait, and in a Line.

* Cabinets de Jardin *are much the same with our Summer-Houses.*

THE Quincunces we make now-a-days, are very different from those of the Ancients mentioned by *Vitruvius*, that were like the Cinque-Points of a Die, a Tree being planted in the Middle or Center of the four, which is now quite out of use, because it makes some of the Walks narrower than others. They now plant their Quincunces in Lines returned at right Angles, forming a Checker or perfect Square every way, which renders the Walks more regular, and of equal Breadth throughout.

THE sixth Kind, or the Woods of Ever-Greens, are the finest of all, on account of their continual Verdure, as well in Winter as Summer; but are the least made use of in Gardens, because the Length of Time required to bring them to Perfection puts People out of Conceit with planting them.

IN the following Designs you will find all that can be desired in the Business of Wood-work; and I think, I may say,

ſay, this Subject is now ſo exhauſted, that the Contrivance of theſe ten Plates is not to be out-done.

THE firſt Plate contains two Deſigns of Foreſts, cut thro', in the beſt and moſt magnificent Manner.

THE firſt Figure deſcribes a Wood pierced with a double Star, having a great * Hall in the Middle, adorn'd with a Water-work that has three Jets or Spouts, and four other Baſons ſo diſpoſed in the Wood, that the Spouts of them range with thoſe of the great Water-work, which makes a fine Sight, when in walking you diſcover three Spouts at leaſt in every Alley, in ſome five, and at each End of the Middle-walk you ſee all the ſeven: Beſides which Ornaments, this Wood is pierced to ſuch Advantage, that which way ſoever you turn yourſelf, you have three Walks at leaſt that face you, and form a Gooſe-foot, and ſo at the eight Entrances: A little forwarder you find ſmall Croſs-ways with four Alleys; and in the great ones, which are ſet out with Baſons and Yew-Trees, there are ſix Walks that meet in a Center, and compoſe Stars. The eight principal Walks, you may obſerve, are made wider than the others. This ingenious Compoſition renders the Wood as pleaſant as can be, though there be no Cabinets nor Galleries contrived in it, as in the other Deſign by the Side of it.

* Sale de Jardin *is a large Place of a regular Figure, where the* French *banquet and hold their Balls, not incloſed with Walls as our Banqueting-Houſes uſually are, but environed with Greens, and open at Top; and in theſe they often dance by the Light of* Flambeaux.

THE ſecond Figure ſhews another Wood cut into a ſingle Star, with a great Hall likewiſe in the Middle, and a Water-work adorned with one large Spout, which is ſeen from eight Walks: Near the Middle of theſe, you find a great Oval, the Circular-Walks of which ſtrike into thoſe of the Star, and have their Points cut off, to make eight Croſs Ways. In walking round this Oval, you find other Walks that lead you into eight Cabinets, or Groves, all different one from another. The firſt Cabinet, beginning below upon the Right Hand, is a great Circle of Horn-beam cut with Niches for Seats and Shrubs; in the Middle is an Octogone ſunk hollow, otherwiſe call'd a Bowling-green. The ſecond going higher, conſiſts of three ſmall Pieces that run one into the other, the Middle one of which is an oblong Square ſet out with Yews, and the two at the Ends are of a circular Form, with Benches. The third Cabinet is a little

little Gallery of Water, compoſed of ſeven Bubbling-Spouts that fall again into a Gutter, or Trench, made in the Middle. The Paliſade is border'd with Pedeſtals, Figures, and Yews between them; and at the two Extremities of the Gallery are two Niches with Seats. The fourth is of a ſquare Form, hollow'd on each Face, with a Piece of Graſs-work in the Middle, and four Yew-Trees at the Corners. The fifth Cabinet in courſe is a Figure in Cants, which form an irregular Octogone, and in the Middle of it is a circular Bowling-green. The ſixth is a Gallery very different from the former, in that it is planted with Trees, and terminated by Oval Baſons with Seats. The ſeventh is very plain, being no more than a long Square hollowed out at the two Ends, with a Graſs-plot, and two large Yews planted in the Centers of the Semi-circles. Laſtly, The eighth Cabinet is of a ſquare Form, the Angles of which are ſtruck off by Cants, and the Middle is filled with a Graſs-work chamfered out at the four Corners.

THESE two Woods contain about ſeven Acres each, and are proper only where there is a great deal of Room. Nevertheleſs, their Deſigns may be executed leſſer, or bigger, according to the Place; but the larger they are, the better, becauſe the Walks come not ſo near one another. The Scale which is common to both theſe Deſigns, will inform you of all the Proportions.

THE ſecond Plate contains four Deſigns of Foreſt-Woods, whoſe Form is oblong, and the Extent about ſix Acres. In the three firſt Figures, are Woods proper for a great Line or Viſta, where a large Walk muſt be kept in the Middle, which parts the Deſign in two, and yet does not hinder the Whole from appearing very regular and agreeable.

IN the firſt Figure are ſmall Alleys running in ſquare Compartiments, which are terminated by ſix ſeveral Cabinets, adorn'd with Arbors, Green-plots, Seats, and Yew-Trees. In the Middle of the great Walk is deſign'd a Hall in Cants, and a Baſon of Water with one Spout.

THE Alleys of the ſecond Figure are diſpoſed ſo, that the Cabinets at the Corners ſtrike one into the other: But the Hall differs very much from the others, being made with a

Sweep

Sweep in the Middle, which presents you with a Goose-foot on each Side, with four Pedestals for Statues or Vases. The Walks of these Goose-feet center every one upon the Spouts of the Water-work, for which Purpose there are made three of them, which makes the circular Alleys very pleasant, all these Jets being seen one after the other, as you walk. The Bason is of a very particular Design, and is set in the Middle of that great Walk which is planted with Trees that stand single and detached.

THE Composition of the third Figure is a great Circle, in the Interval of which, and of the Hall in the Middle, are contriv'd two Cabinets with Cants, with oval Green-plots; from this great Circular Walk, you enter, by Alleys that make an Elbow, into the Cabinets that are at the four Corners of the Wood, where you find other Walks that run directly upon the Spout of the Water-work, with Seats just over-against them, which looks very handsome. From these Cabinets and Alleys you pass into the great Middle-Walk, which is planted likewise with Trees that stand detached.

THE fourth Figure is an entire Design, without any Walk through the Middle; it is pierced by Diagonal Walks that form four S. *Andrew*'s Crosses, in the Center of which are made Cross-Ways and Green-plots. These Walks run into a great Hall, which leads to four several Cabinets that answer one another. There is also a Grass-plot terminated by two round Basons, which is somewhat extraordinary; nevertheless, it does very well, by reason the Diagonal Walks center upon the Spouts of them.

IN the third Plate, you see six Designs of Woods very much diversified, and fit for square Places of about four Acres Extent.

THE Wood describ'd in the first Figure is enter'd at the Corners, where you find two Walks centering upon circular Cross-Ways, that lead you into a Figure with eight Cants. This Figure is disposed in such Manner, that four Corners of it striking into the Cross-Ways, and the other four being taken up by Sinkings with Benches, it prolongs the Walks of the Entrances, so that a Person sitting upon one of these

Benches

Benches may discover two Corner-Walks, besides that which faces him, and which, with the three Walks that front the other Benches, conduct you into the Middle-Part, enriched with an Island, and four low Water-Spouts that make the Mote about it. In the Middle of this Island there is a Statue, and a Bridge is made to go over to it.

THE second Figure is a Wood that has twelve Woods to enter it by, the Square-Walks center upon the Middle-Part, and the Diagonal Walks lead to circular Grass-plots, environ'd with a double Palisade that stands detached, and is cut through against every Line. These Cross-Ways present you with Goose-feet, from whence you pass to a great square Figure that forms a * Cloister, the Angles of which are taken up with Niches and Benches. The four Middle-Walks lead you to a square Piece of Water, the Corners of which advance like Bastions. In the Middle rises a large upright Spout, and in the Corners four other oblique Spouts, that throw their Water arch-wise.

* Cloître, *in Gardening, signifies a close Walk that environs a Square, or other regular Figures.*

THE Wood shewn in the third Figure is the plainest of all, and may be executed in the Space of two Acres, or of one, if need be. 'Tis a plain S. *Andrew*'s Cross, surrounded by a great Octogone, from whence, by four Walks, you are carried into a great Circular Hall, adorn'd with a Bason in Cants, and a Row of Trees and Yews that stand detach'd, with four Niches for Seats.

THE fourth Figure offers a Design much fuller of Work, and of an Invention somewhat particular. 'Tis a S. *Andrew*'s Cross likewise, that leads you into a great square Figure forming a Cloister; in the Middle of each Walk you find Sinkings in the Shape of a Half-Moon with Basons, facing which are Walks that strike into the Middle-Part, as well as those of the Cross, and there make a regular Star. The Hall in the Middle is of a circular Form, cut by eight Niches for Seats between the Alleys. It is filled with a large octangular Bason, having in the Middle of it an Island, with a Figure surrounded with Cases and Flower-pots. The Water of this Bason comes through four Mask-heads placed upon four Sides of the Octogone, and a Bridge is made to

go

go over into this Island, which, in the Middle of a Wood, looks very agreeable and surprizing.

THE fifth Figure is not entirely square, as the others, this Design appearing most graceful when it is oblong, which has obliged me to make, on the Sides of it, Walks, with Grass-plots of Cut-work. In this Wood are contain'd several Designs, as a great Oval, a Lozenge, and a S. *Andrew*'s Cross, which all together make a very handsome Compartiment. You find in it two Goose-feet, eight Cross-Alleys, and two Recesses, or Sinkings, with Benches. The four Entrances at the Corners, and the two in the Middle, are continu'd to a Circular Hall, ornamented with a Bason and Niches, for Seats and Shrubs.

IN the sixth Figure is shewn a Wood, the Entrances of which are in the Middle, for Variety; they are interrupted by the four Angles of a great Lozenge, which leads you to Cabinets contriv'd in the four Corners, all differing one from another. There are small Cross-Ways over-against these Cabinets, which discover the Entrance of a Cloister; in the Middle of which are four Passages that admit you into the Hall in the Center, which is in Cants, with an oval Bason: Fronting these four short Alleys, you find Niches with Seats. 'Tis needless to explain the four Groves at the Corners, because what they contain may be judged of by what has been already said on the Subject of those found in the other Designs, which have been particularly and sufficiently treated of before.

THE fourth Plate is the fullest of all, containing ten different Groves; the four first Figures are fit for Places that are oblong, and about an Acre and a half, or two Acres Extent; the six others following, shew what may be done in long Slips of Ground, and the narrow Guts of a Garden. These Woods are much varied, and though plain, are nevertheless handsomely cut, and well wrought. You may judge of what they contain, by inspecting them, and applying to the Scale, so that there is no need of entring into a longer Discourse of their Particulars.

THE

THE two following Plates, which are the fifth and ſixth, contain Cabinets and Salons fit to be placed in Woods, in caſe the Deſigns of thoſe already given ſhould not ſuit the Places you have for them, or ſhould not be liked ſo well; you may then make Choice of any of the twelve Figures that are in theſe two Plates, of which I ſhall likewiſe give no particular Deſcription, the Eye being able to judge of what they contain. I have cauſed theſe Salons to be engraved the larger, that you might be able to plant after theſe Deſigns, without being obliged to draw them over a ſecond time.

THE ſeventh Plate preſents a Grove of a different Nature from the foregoing, and is that we call an open Grove in Compartiments. This Plate contains but one ſingle Deſign, that, being the larger, you might better judge of its Diſpoſition; but though it appear large in the Plate, it contains however but one Acre at moſt, and is adorn'd and caſt into as many Compartiments as poſſible. This Grove is croſſed by two Walks, which center upon a Baſon that forms an irregular Octogone, and is environ'd with an oval Hall, which is cut in its four Middle Lines by Walks, that lead to little Cabinets and Viſtas contriv'd in the Squares of this Wood; whence, from Seats conveniently placed, you diſcover the middle Water-ſpout. The Spaces between theſe Cabinets are poſſeſſed by Graſs-plots caſt into Knots and Circles, adorn'd with Yews regularly diſpoſed. The Paliſades of this Grove ſhould be kept no more than Breaſt-high, that all the Pieces of the Compartiment may be ſeen over them.

ONE quarter of this Deſign is marked with a ſingle Line only for the Paliſade, and with a Cypher for the Place of the Trees, that it might be put in Execution with leſs Trouble, than could be done, if the Trees and Paliſades were raiſed in Perſpective, as they are in the reſt of the Deſign.

IN the eighth Plate you have four diſtinct Pieces, that may be made uſe of in the Middle of a Wood, in caſe you ſhould not like the foregoing Deſigns ſo well. Theſe are Halls planted with Trees that ſtand detach'd, with Yews between them.

THE Hall in the first Figure is the most magnificent. It is supposed to stand in the middle of a great Wood, and to have but two Entrances; however, if the Place require it, you may make four, taking away the Cabinets at the two Ends, which will not in the least impair its Beauty. It contains about an Acre and a half, but may be practis'd in half that Ground, upon Occasion. It is ornamented with four Basons in a Line one with another, having Benches set so as to face each Walk, and to range with the Jets of the Basons. The middle Piece is a large Green-plot, whose Angles being canted off, make four Octogones at the Corners of the Hall, which are completed by the Palisade. The rest is sufficiently explain'd by the Design itself.

THE second Figure is likewise a great Hall differing from the other, in that it is situated in a great Piece of Grass-work, though it may also be set in the Middle of a Wood. This Hall is a long Square, with a Sweep at the Ends, where are made two Octangular Basons, in the Center of which the Diagonal Entrances of the Hall meet, and are terminated. There are Figures placed at the Ends, and two Seats at each Corner of the Hall, which is border'd only with Grass-work and Trees, without any Palisade or Path behind them.

THE fourth Figure, which I shall explain before the third, because of the Relation it has to the two preceding, is a little Hall very plain, surrounded with a Palisade Breast-high, with Trees planted in it at proper Distances. It is placed as the other was, in Green-plots, but these are divided from the Palisade by a rolled Walk. In the Middle is a Statue, which answers the Line of the Walks and Benches.

IN the third Figure you have a Wood planted in Quincunce, with a Hall and Cabinets that make a Compartiment, which will appear a very new Contrivance; Designs of this Sort usually consisting of great Parallel-walks only, planted checker-wise, without any other Ornament. Tho' there be contrived a Hall in the Middle of this, with a Bason and Cabinets that form a Cloister, and strike one into another, it nevertheless destroys nothing of the Quincunce,

nor

nor does it interrupt the Lines of Trees, of which ſome few only are taken away in the Middle, and at the Corners, to form the Hall and Cabinets. The Under-part of this Quincunce is laid with Turf in ſome Places, which makes a Diſtinction, and ſets off the gravel'd Parts of the Walks and Hall.

THE ninth Plate gives you the Idea of four Pieces of Garden-work very extraordinary, and yet very magnificent in their Kind, which are thoſe we call Cloiſters.

THE firſt Figure is the plaineſt of all, and is a great ſquare Graſs-plot, with a Statue in the Middle of it, ſurrounded with a double Walk, open'd againſt the Lines of the other Walks, and againſt the Seats. This Cloiſter is in the Midſt of a Wood, and you come to it by four Diagonal Walks, that lead to Croſs-Ways, adorn'd with Green-plots.

THE ſecond Figure repreſents a Cloiſter of a circular Form, ſituated in a Wood, having an eight-corner'd Baſon, ſurrounded with Arbors made of the Trees plaſhed one over the other, and confined by Poles, Hoops, and ſtrong Lattice-work, fixed with Iron-Wire. The four Walks that lead to it, are likewiſe cloſe Arbors; and on each Side is a ſmall rolled Path that forms the Counter-walk, and parts the Arbors from the Paliſade of the Wood.

IN the third Figure you ſee a very magnificent Cloiſter, differing from the others, in that 'tis ſet in the Middle of a Graſs-plot, though it may alſo be placed in a Wood. 'Tis a large Octogone of an oblong Figure, cover'd with Arbors of Lattice-work, having four Cabinets that face the Walks which lead to it. The Middle of this Cloiſter is ſunk below the reſt, and you go down to it by three Courſes of Steps of Maſonry, or Graſs, if you pleaſe. The Bottom of it is beautified with a Graſs-plot, and four ſmall Fountains in Buffets, made upon * the Steps fronting each Walk.

* *Fr.* Gradins, *which in Gardening are a kind of Counter-Terraſſes raiſed like Steps, for ſetting of Caſes, Vaſes, and Flower-pots thereon, to terminate a Walk; and are made of Graſs, or Slabs of Maſonry, either ſtrait or circular, as an Amphitheatre.*

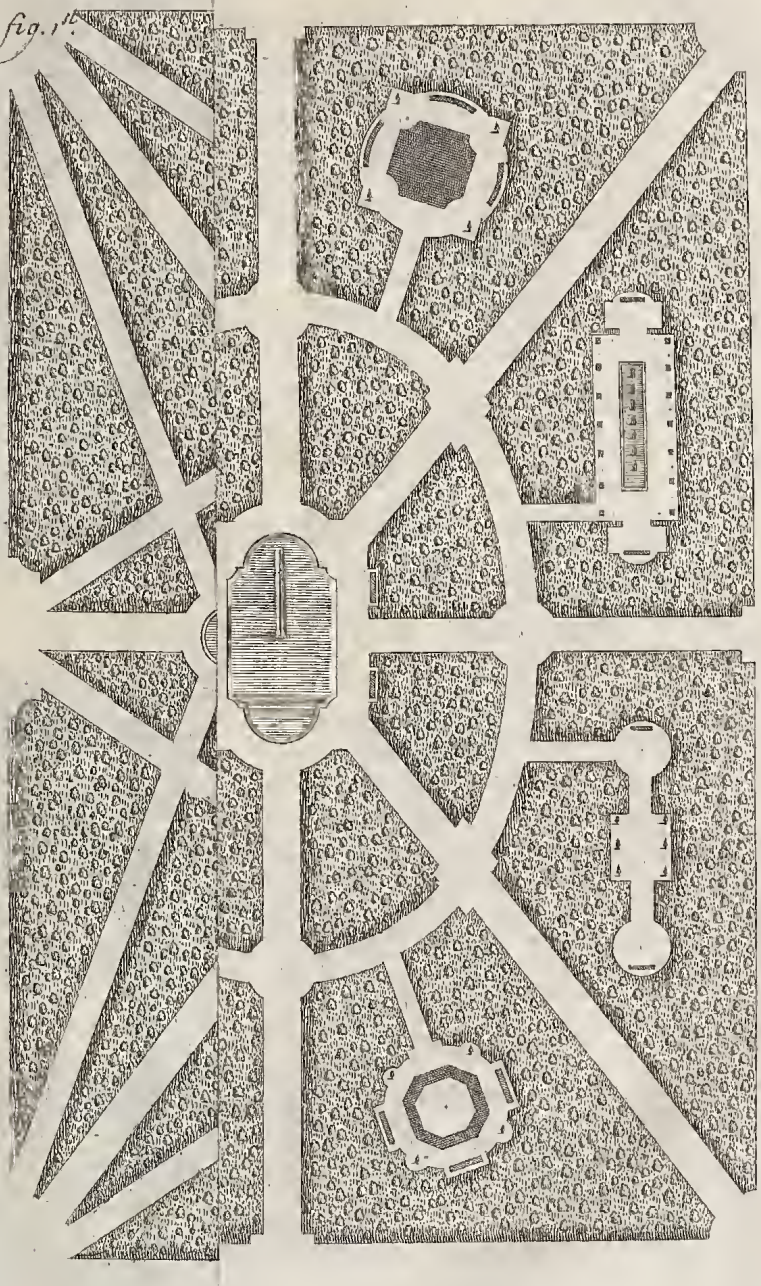
THE fourth Figure is a Cloister-Gallery, formed by a Palisade cut with Arches. There are Seats in it set in such Manner, that the View from one to the other is continu'd a-cross the Arches. In the Middle of this Cloister is a Compartiment after the *English* Manner, edg'd with a Border of Cut-work, and set out with Shrubs and Flowers, having Basons at the Ends, which are surrounded likewise with the same Border.

Lastly, THE tenth Plate of Groves contains the Design of a Labyrinth, of a Contrivance entirely new: 'Tis a large Volute or Spiral Walk, in the Center of which is a Bason, accompanied with a Hall pierced by eight Walks, which carry you to four Cross-Ways, from whence you pass insensibly into the Windings of the Maze, set off with Cabinets, Latticed-Arbors, Green-plots, Fountains, Figures, *&c.* which very agreeably surprize and amuse those that have lost their Way in it. The great Number of Alleys, and the various Turnings in the Composition of this Labyrinth, render it extremely intricate and puzzling, without taking any thing from the Beauty and Regularity of the Design. There is but one Entrance into it, which is also the Outlet, where there is placed a Cabinet of Lattice-work, on purpose to render it still more difficult.

THIS Labyrinth requires some room to be handsomely executed, and can scarce be planted in less than seven or eight Acres of Ground, without the Alleys coming too near each other, which would take away the Intricacy of it, and consequently all its Merit.

A Great Wood cut into a single Star wth Cabinets

fig. 1st

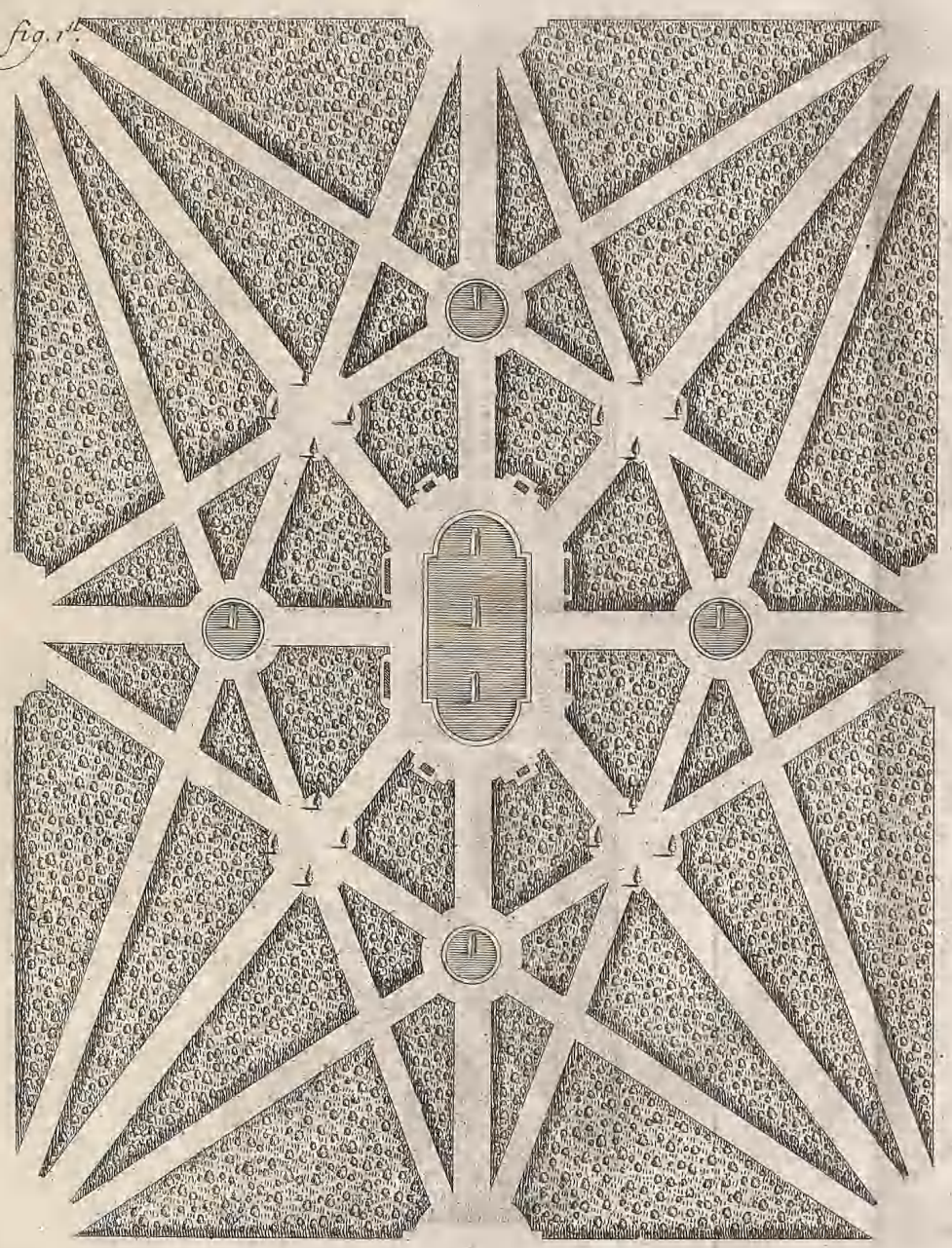


Pl. 1st C.

M. Vdr Gucht Sculp.

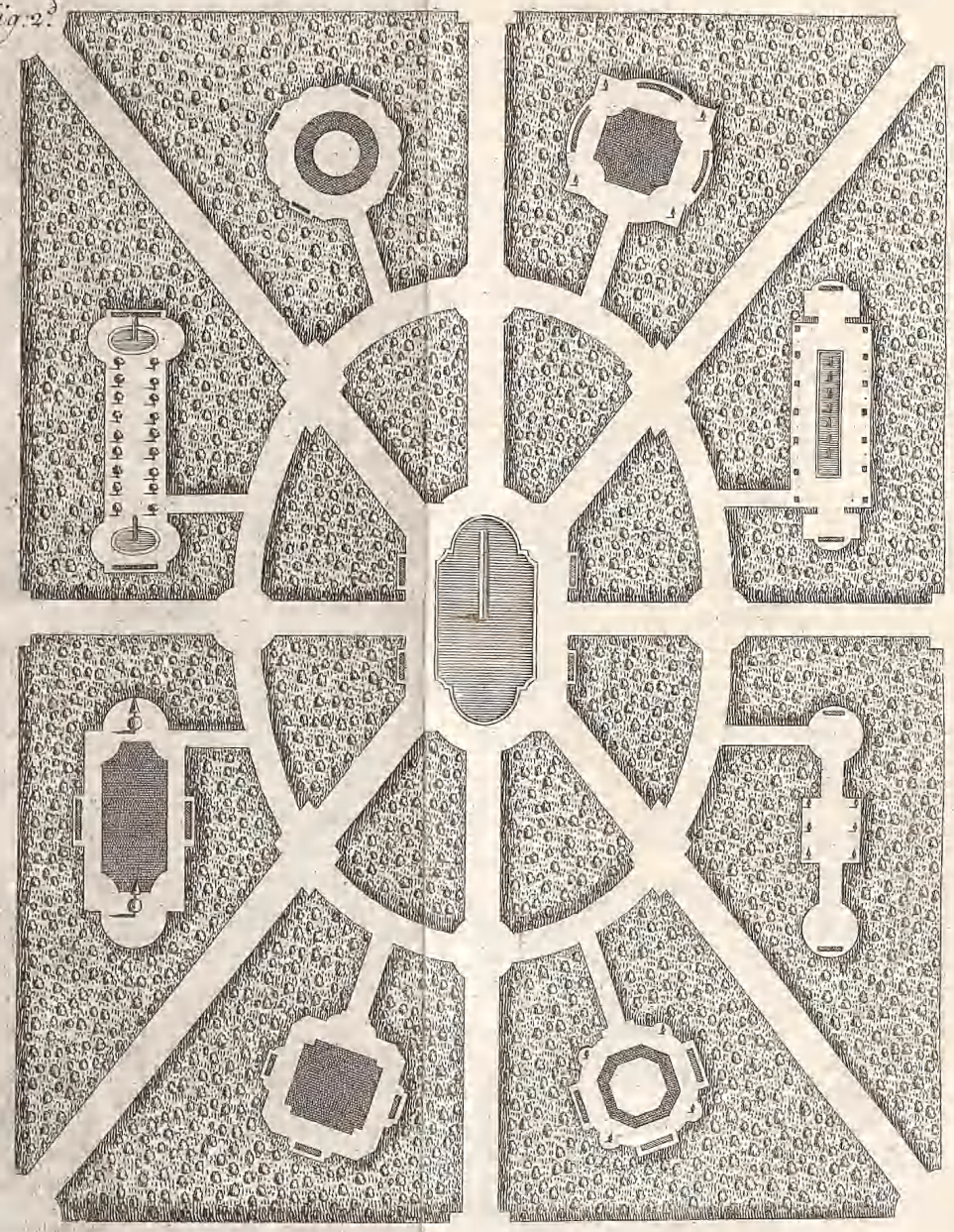
A Great Wood of Forrest trees pierced with a double Star.

fig. 1st.



A Great Wood of Forrest trees cut into a single Star wth Cabinets

fig. 2d.



5 10 20 30 60 Fathom

Pl. 1st C.

M. V.t Gucht Sculp.

Fig. 1.

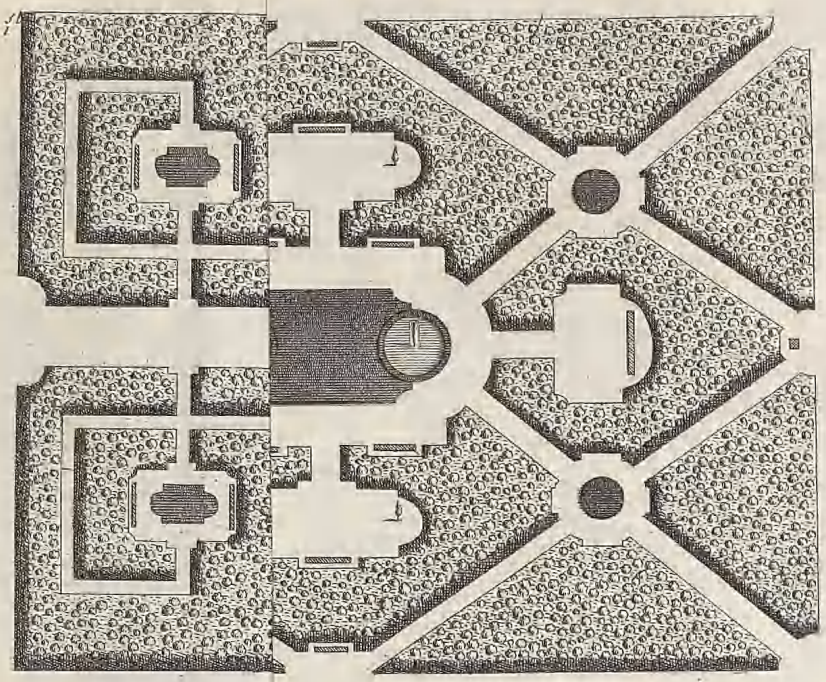
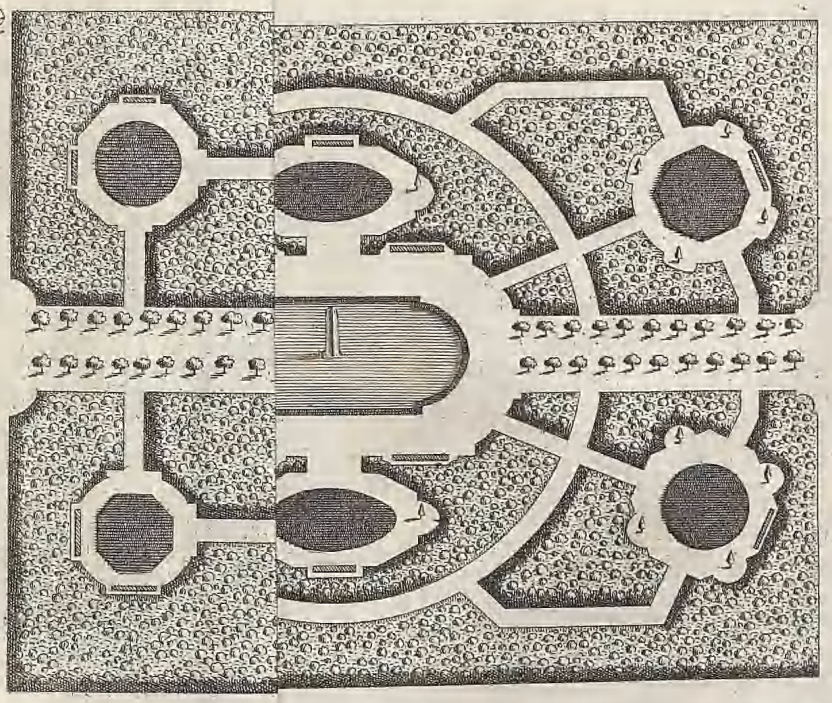


Fig. 2.



Pl. 2.d C.

M. Pdt Guichet Seul.

Designs for great Woods of Forrest trees.

fig. 1.

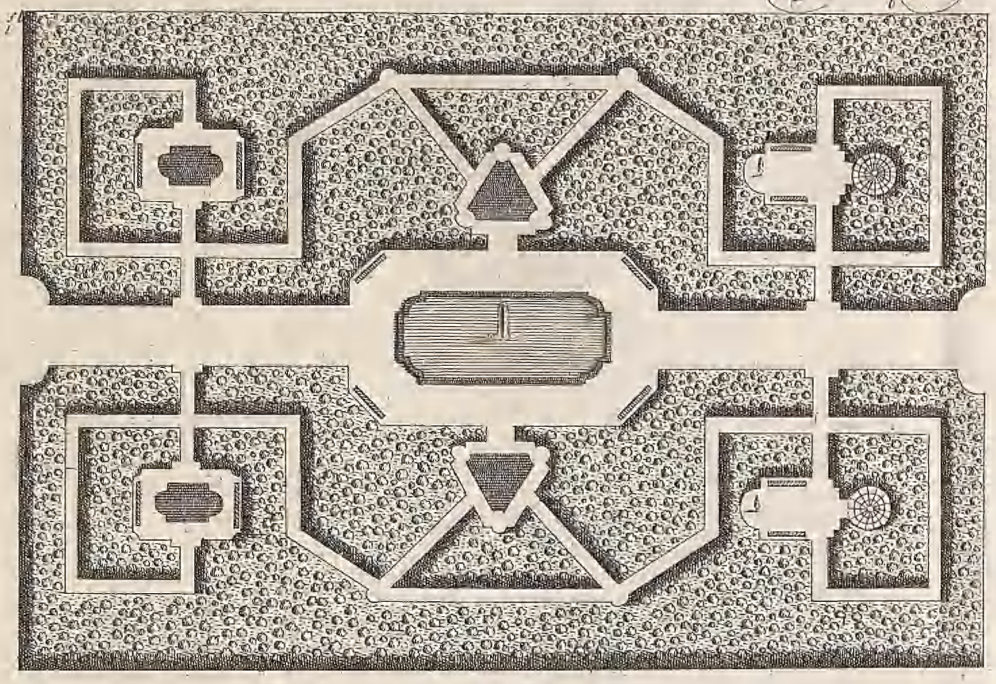


fig. 4th.

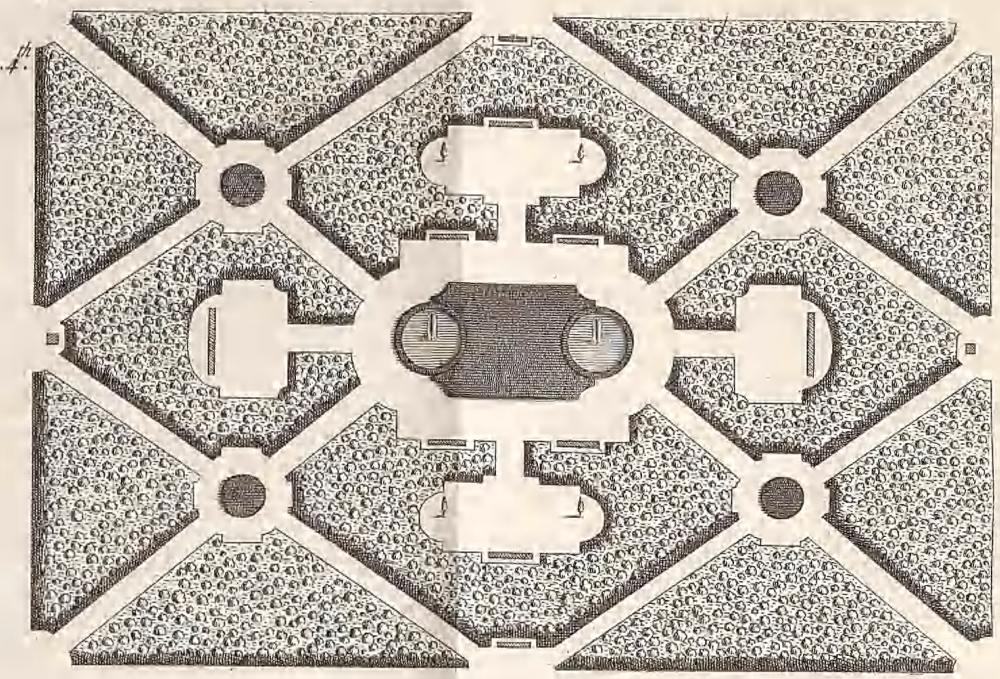


fig. 2d.

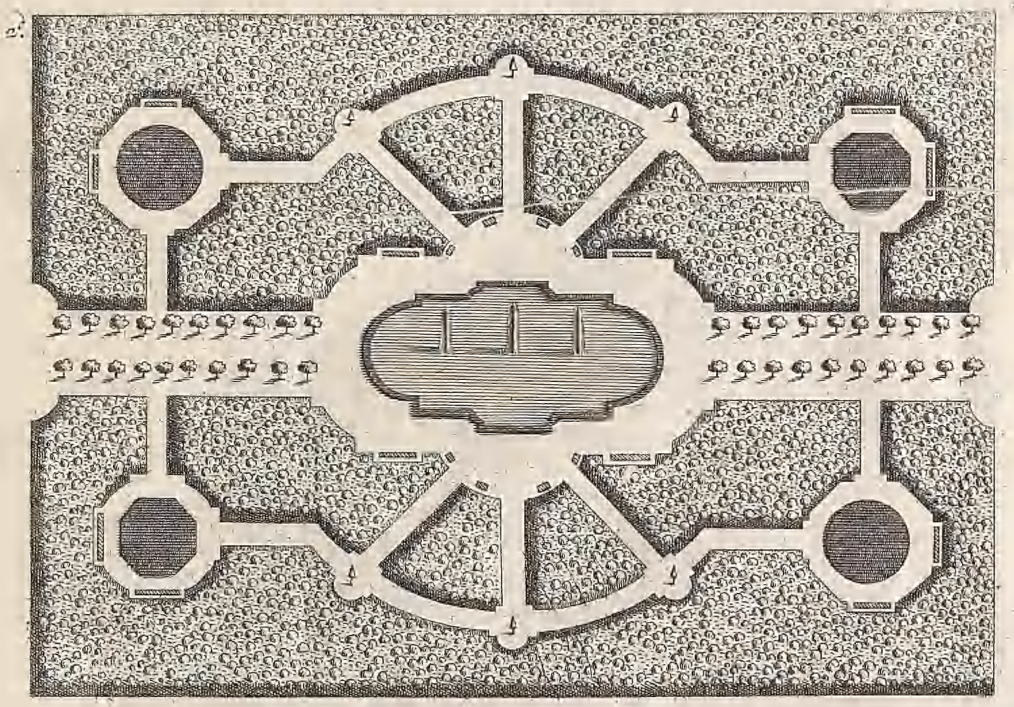
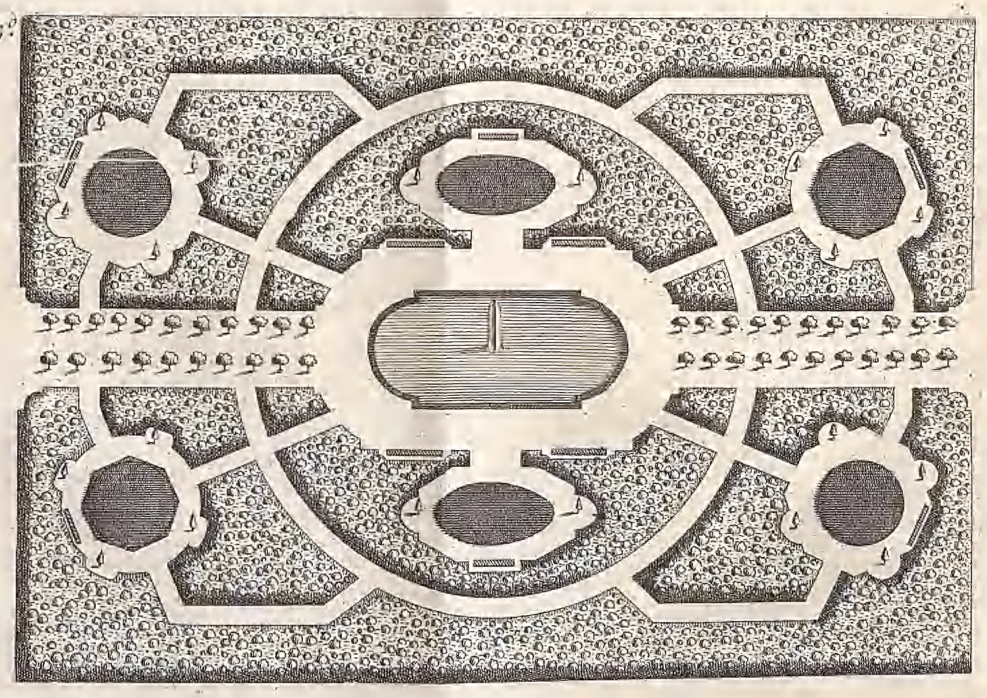


fig. 3d.



5 10 15 30 Fathom

Pl. 2d. C.

M. Pdr Gucht Scul.

fig. 1st.

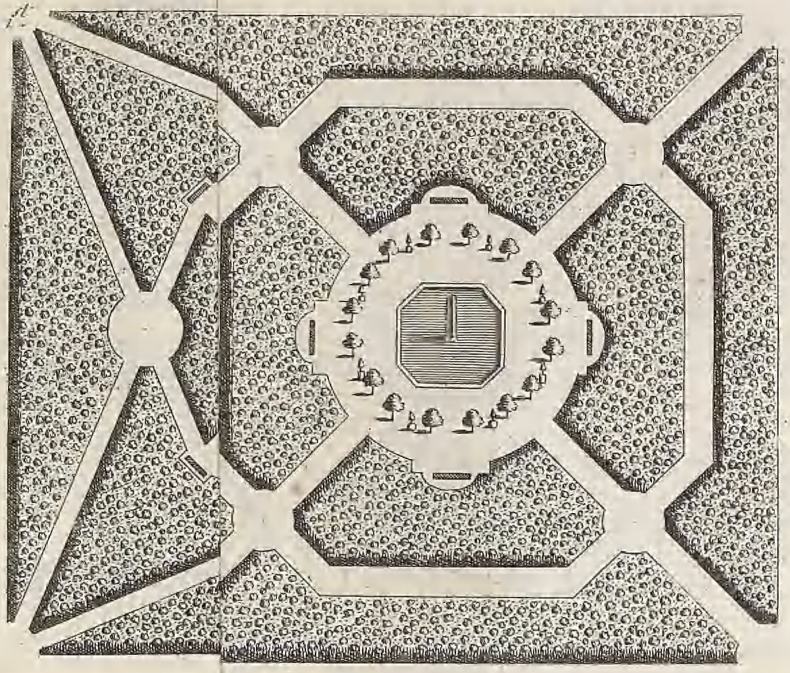
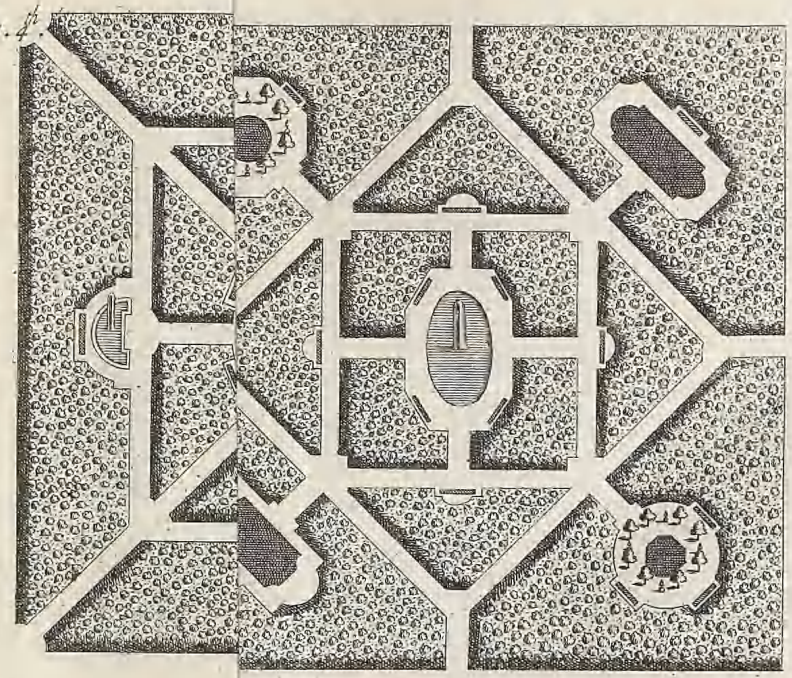


fig. 4th.



Pl. 3d. C.

M. Vat Gucht Sculp.

Designs of Woods of Forrest trees

fig. 1st.

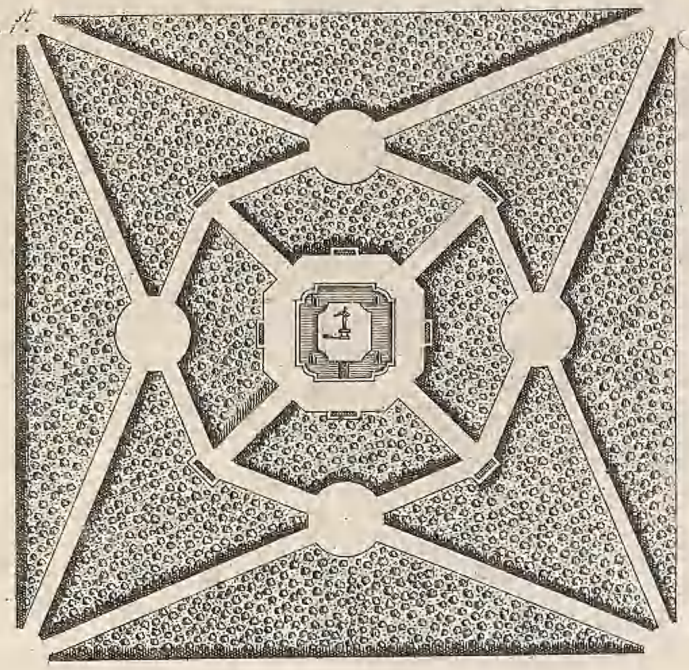


fig. 2d

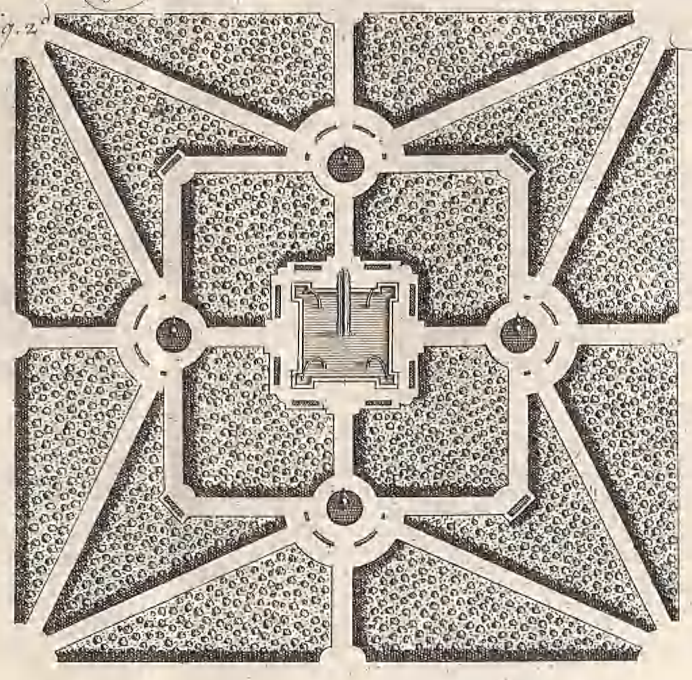


fig. 3d

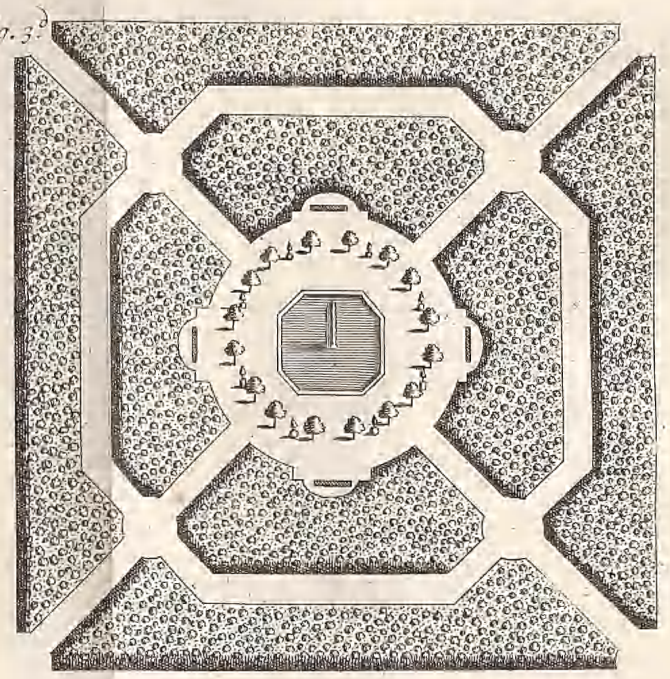


fig. 4th.

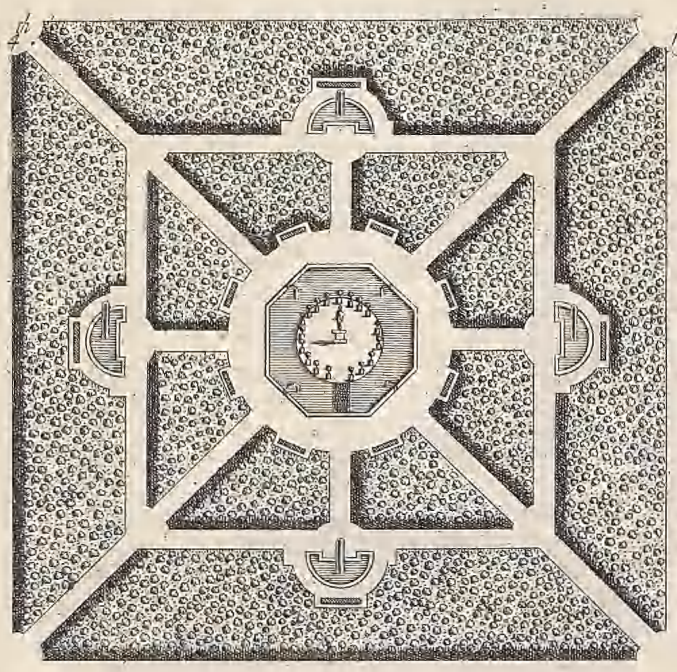


fig. 5th

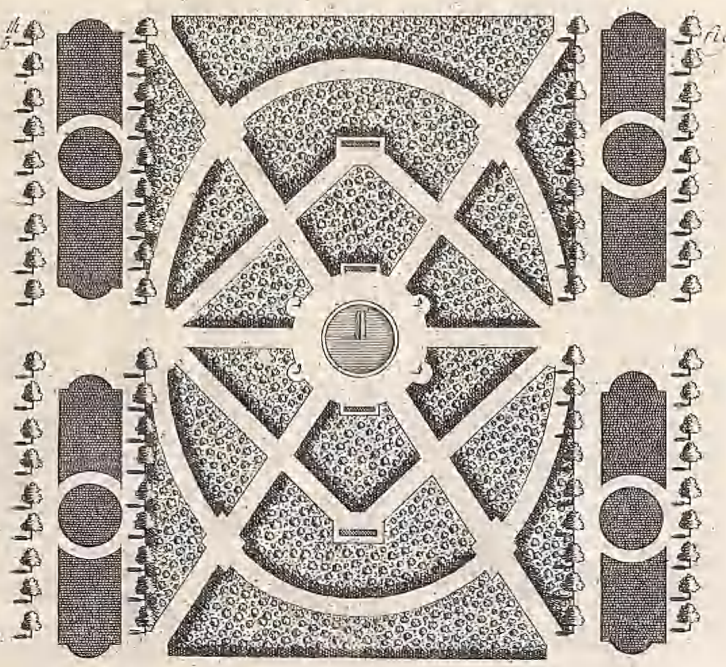
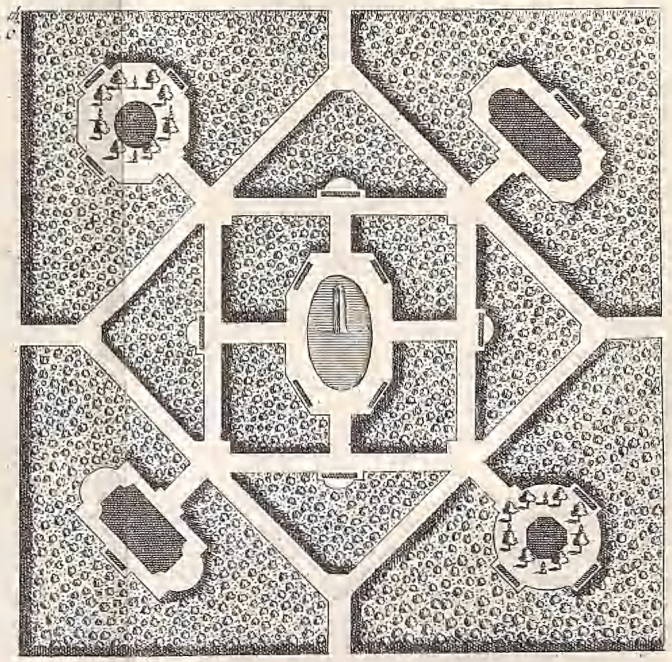


fig. 6th



5 10 15 30 Fathom

Pl. 3d. C.

M. Pd Gucht sculp.

fig. 1st.

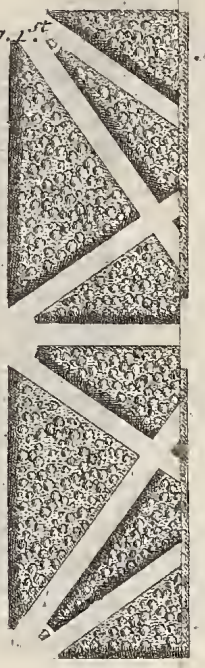


fig. 4

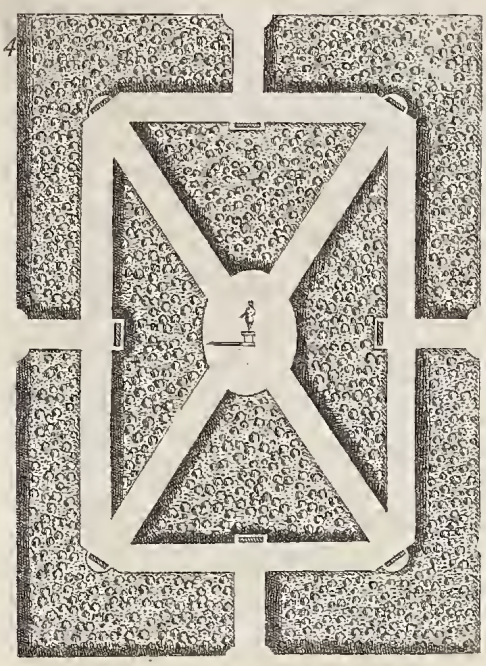


fig. 5th.

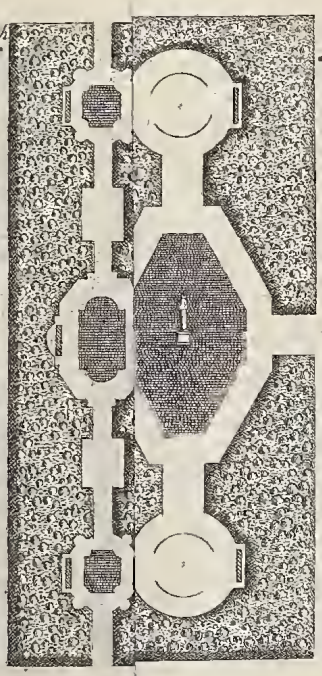
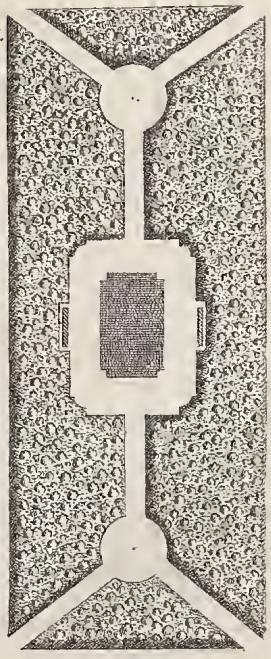


fig. 10.



Pl. 4th. C.

M. Vdr Gucht Scul.

Designs of Groves of a Middle height.

fig. 1st.

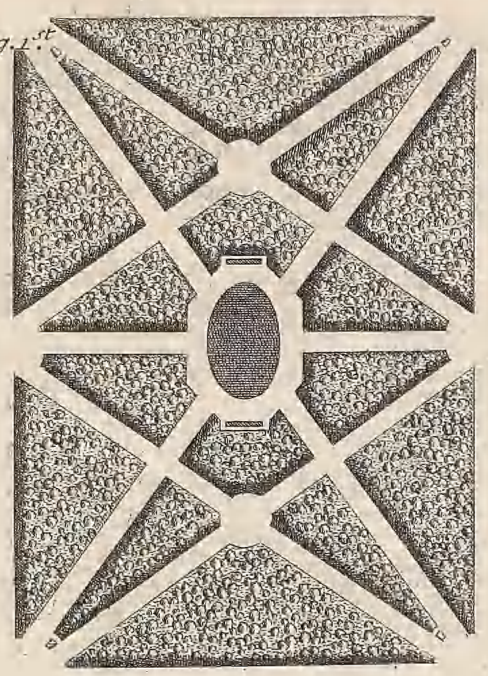


fig. 2d.

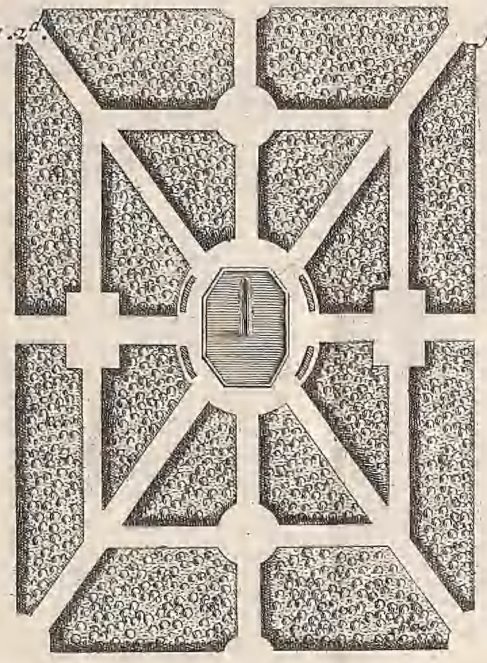


fig. 3d.

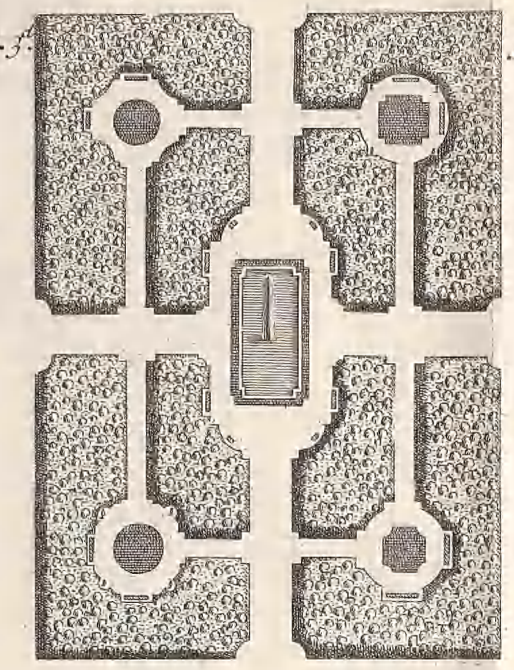


fig. 4

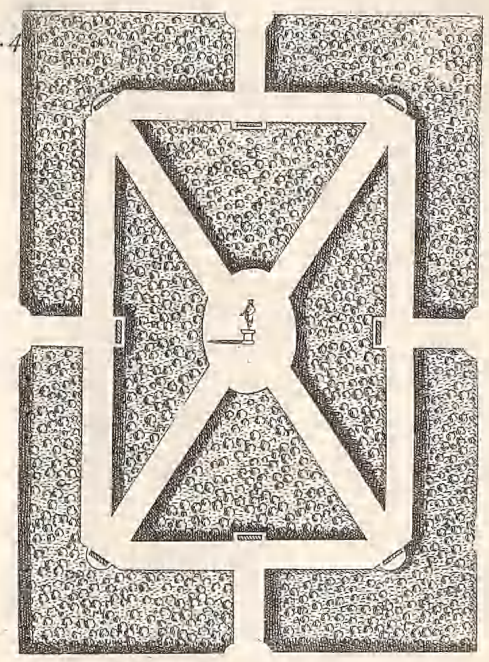


fig. 5th.

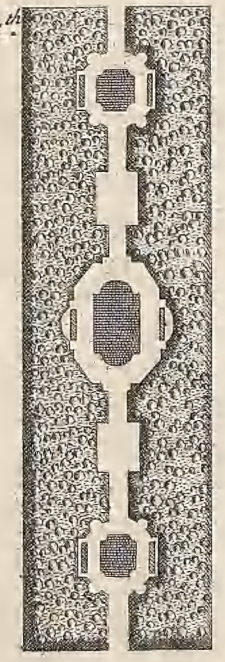


fig. 6.

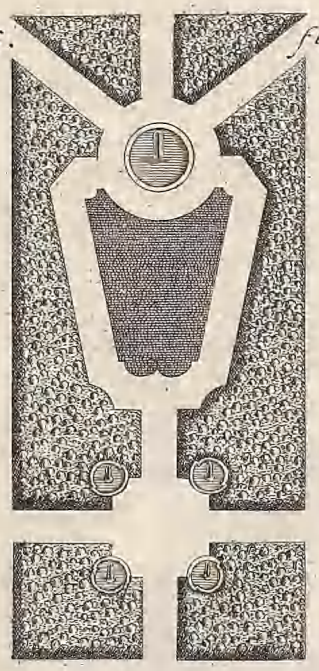


fig. 7.

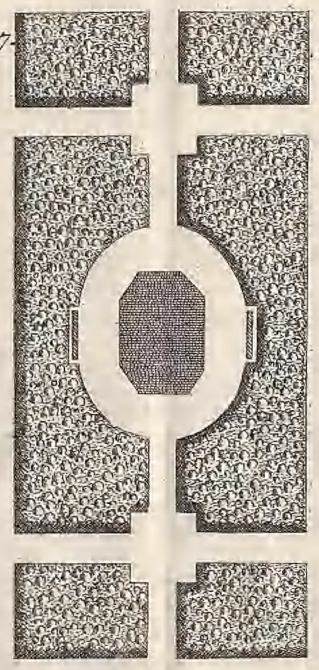


fig. 8

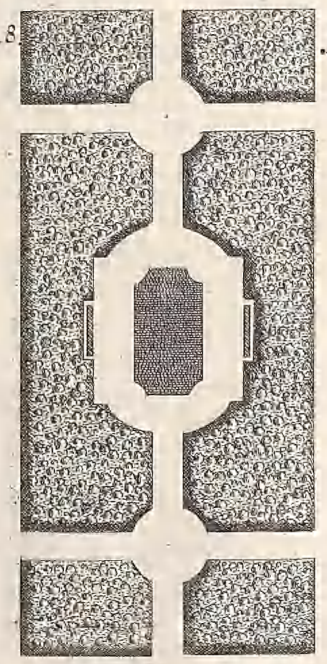


fig. 9.

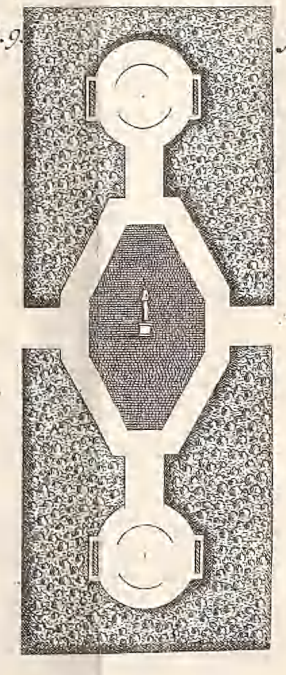
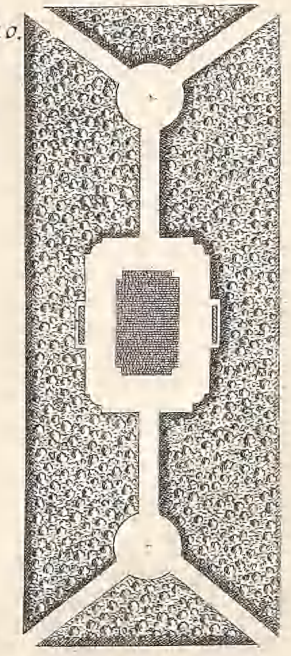


fig. 10.



Pl. 4th. C.

M. Vdr Gucht Scul.

fig. 1

fig. 3

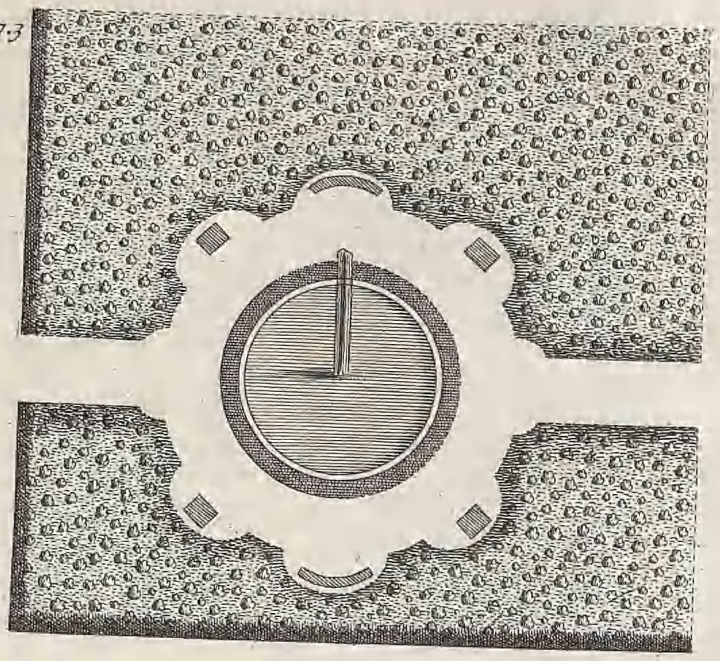
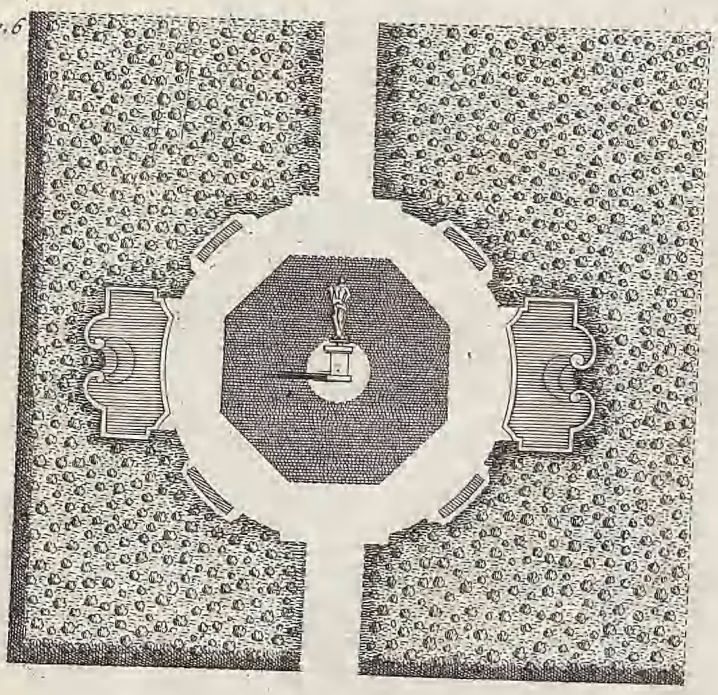


fig. 4

fig. 6



Pl. 5th C.

M.V.dr Gucho scul.

Designs of Cabinets & Salons for Groves.

fig. 1

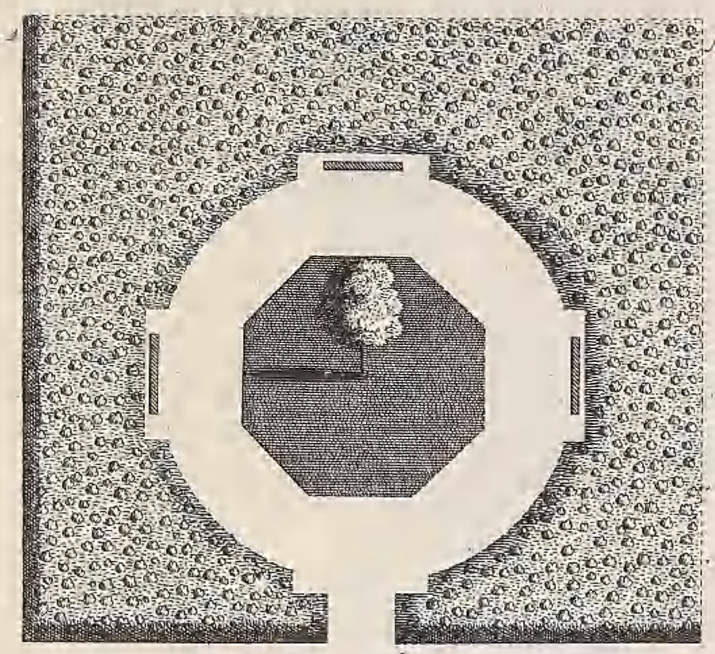


fig. 2

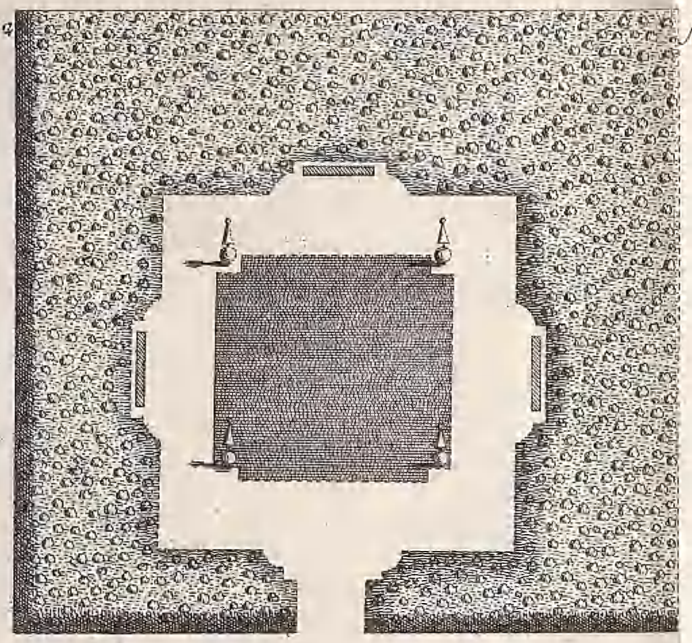


fig. 3

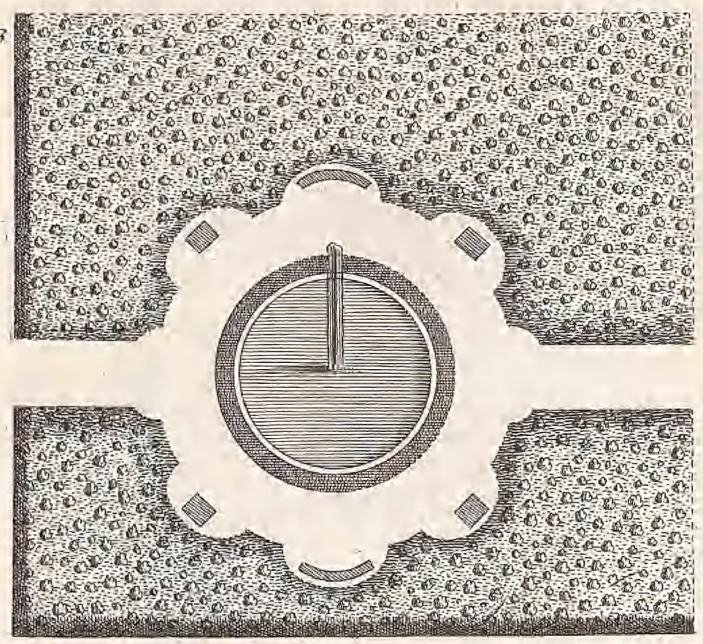


fig. 4

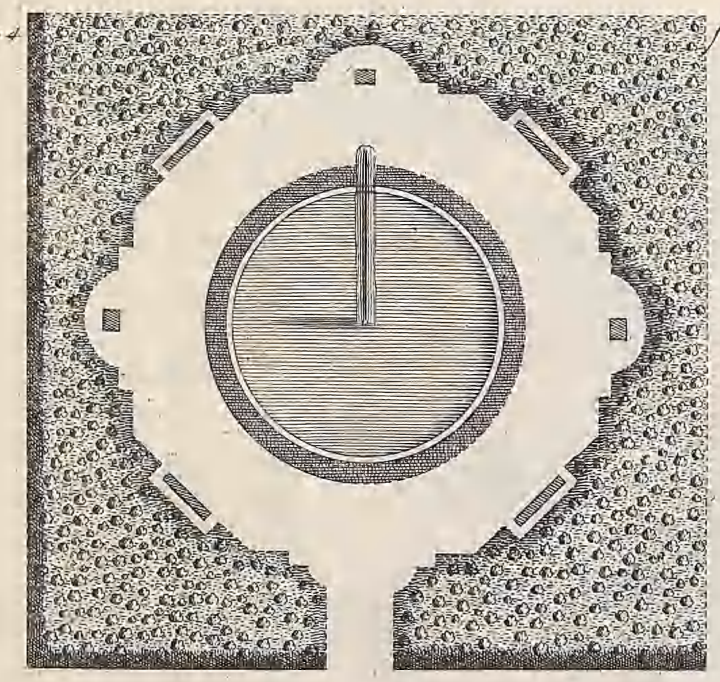


fig. 3

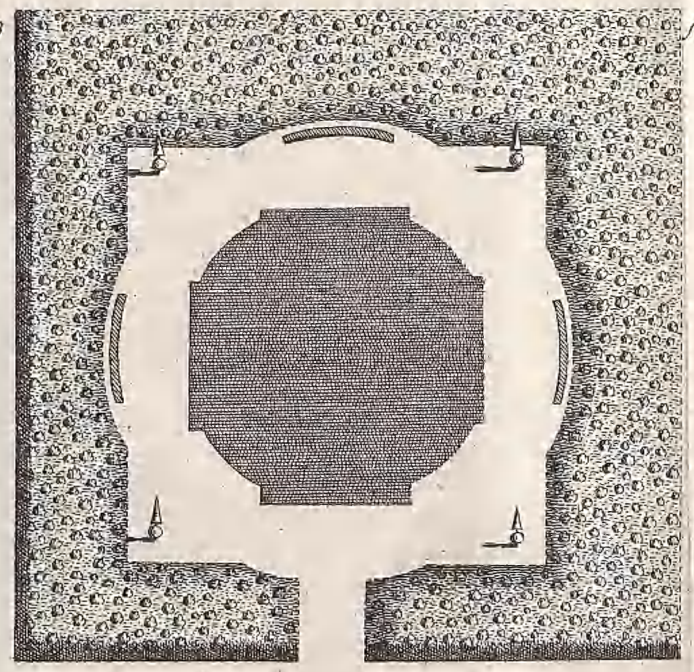
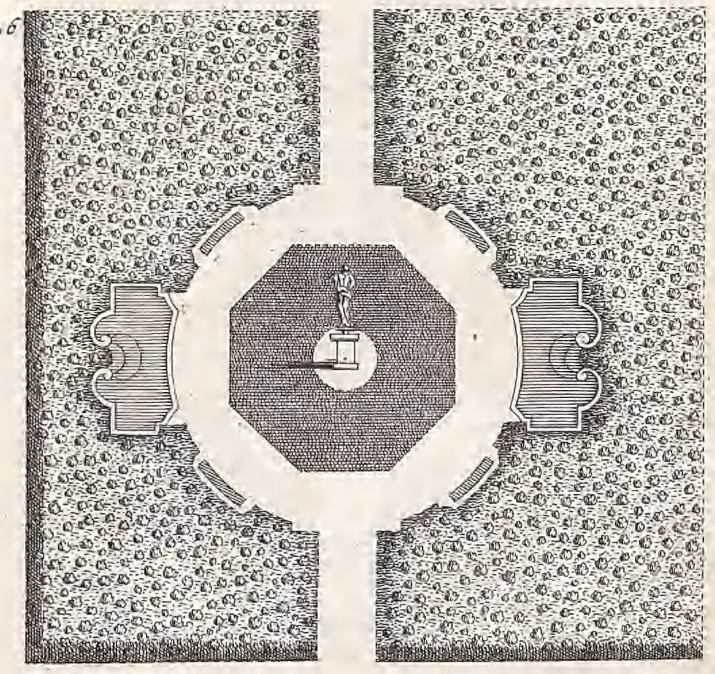


fig. 6



Pl. 5th. C.

5 10 15 Fathom

M. Vdr Guche seul.

fig. 1.

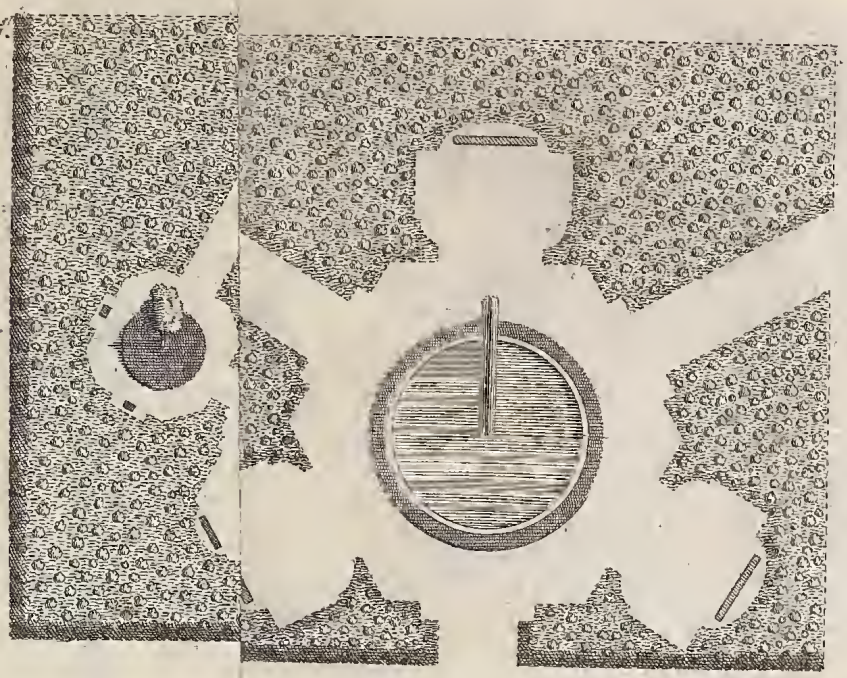
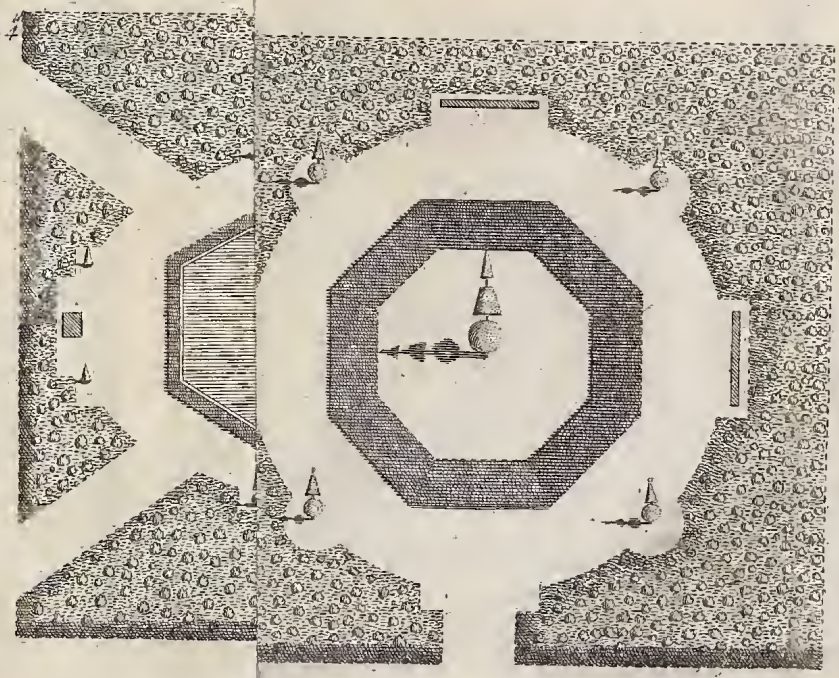


fig. 4.



Pl. 6th. C.

M. J. de Gucht Sculp.

Designs of Cabinets & Salons for Groves

fig. 1.

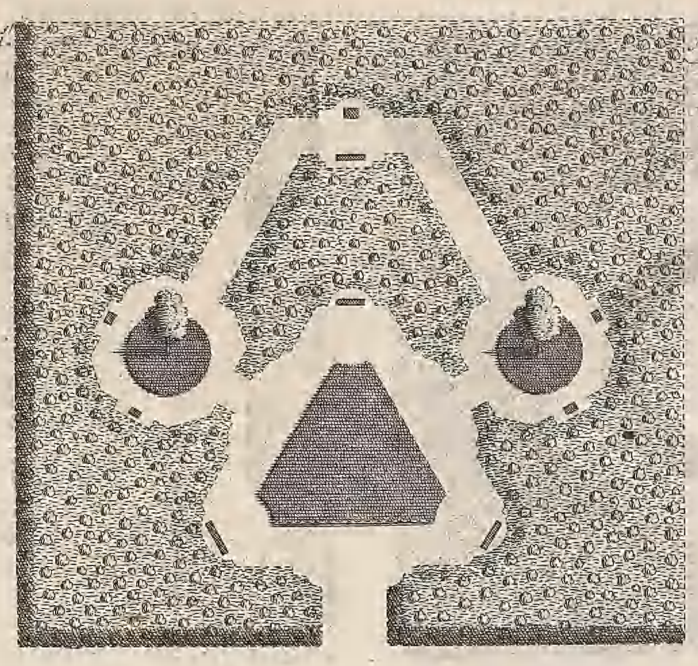


fig. 2.

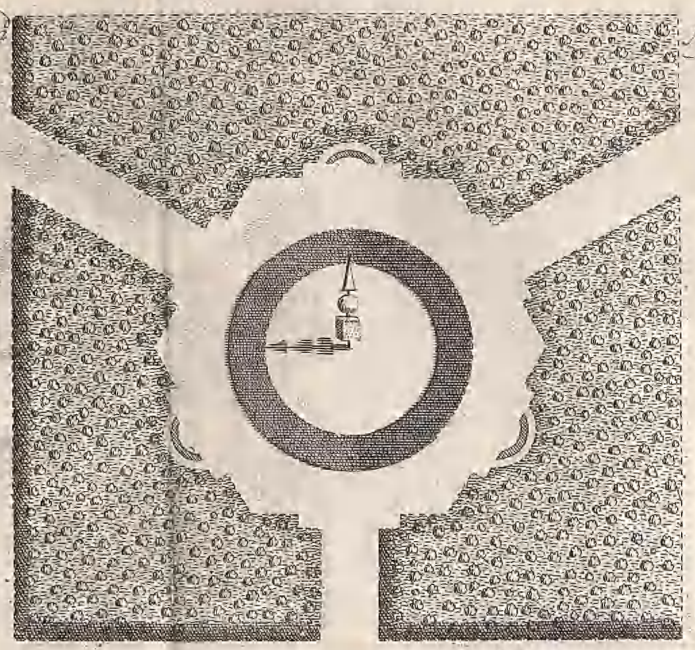


fig. 3.

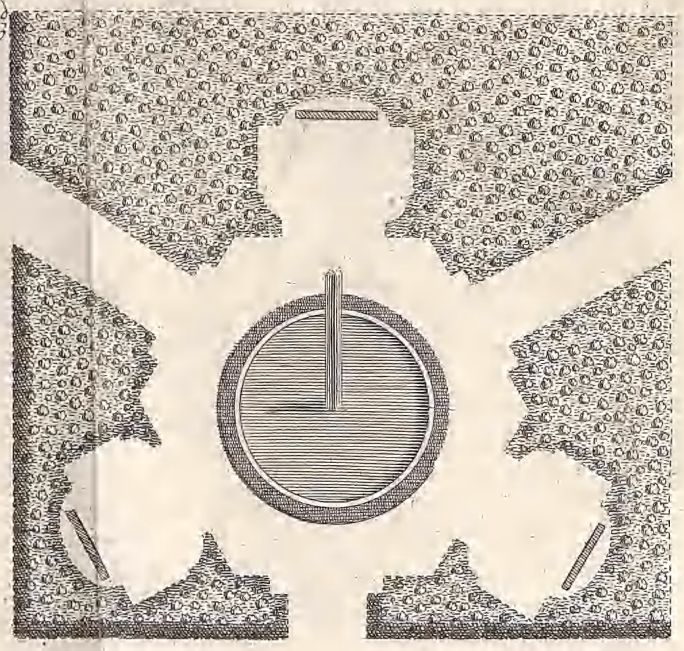


fig. 4.

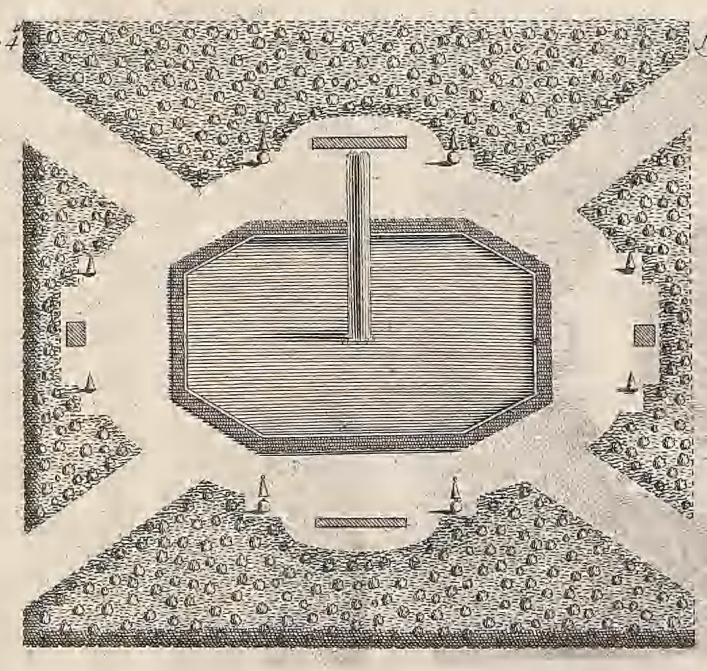


fig. 5.

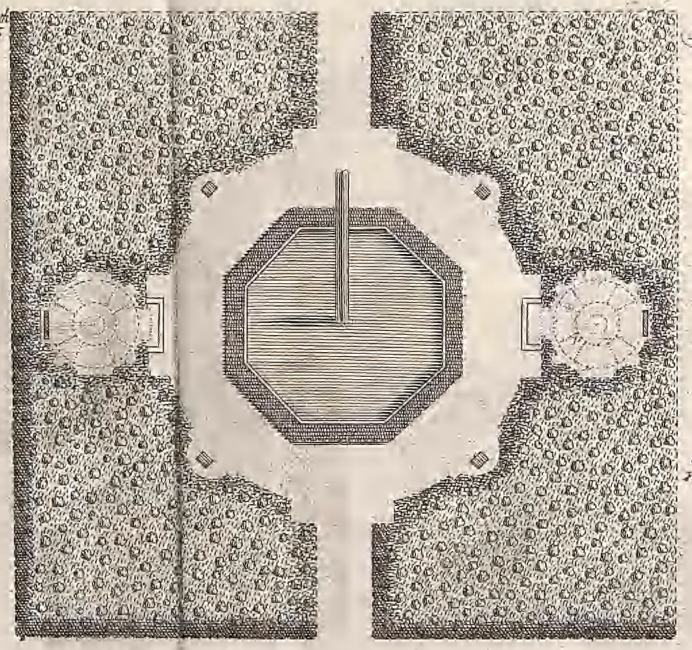
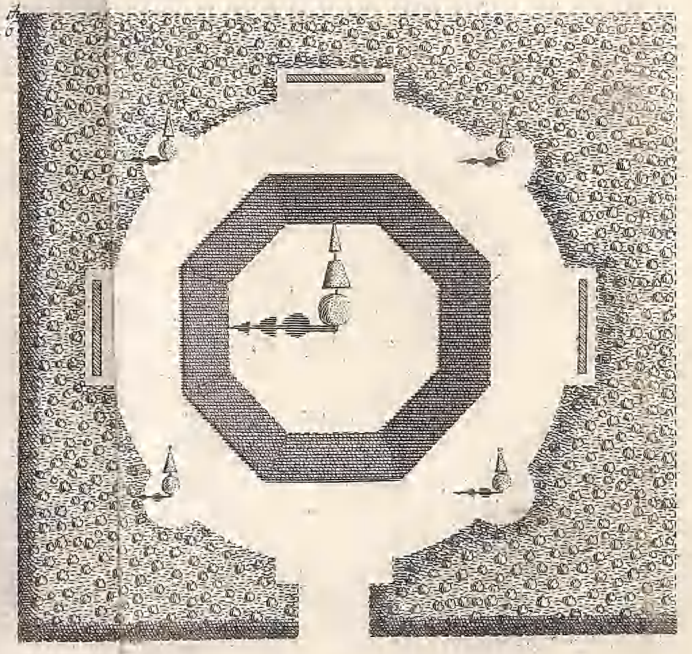


fig. 6.



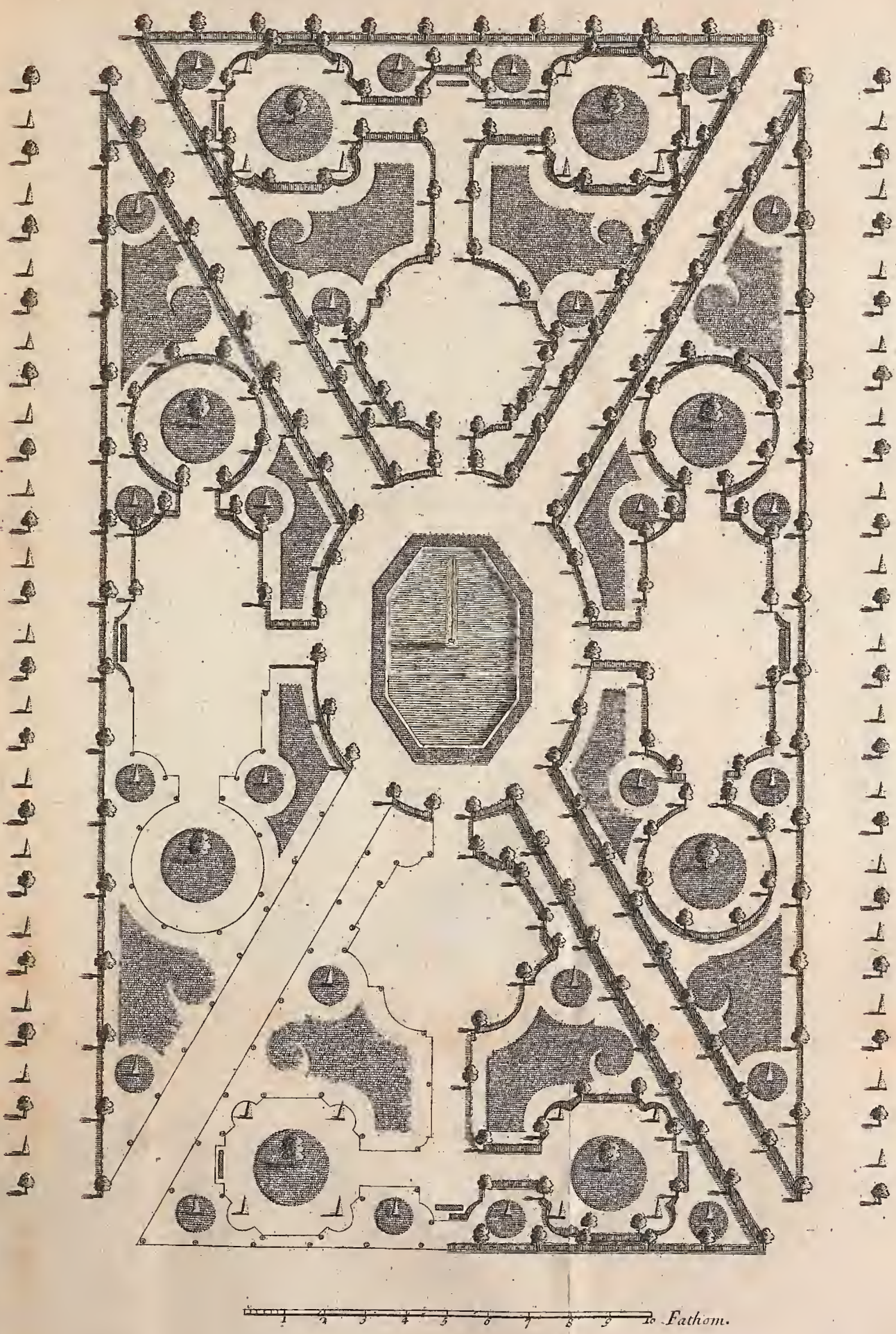
5 10 15 Fathom

Pl. 6.th C.

M. Pte Gucht Sculp.

ul.

An open Grove with Compartments

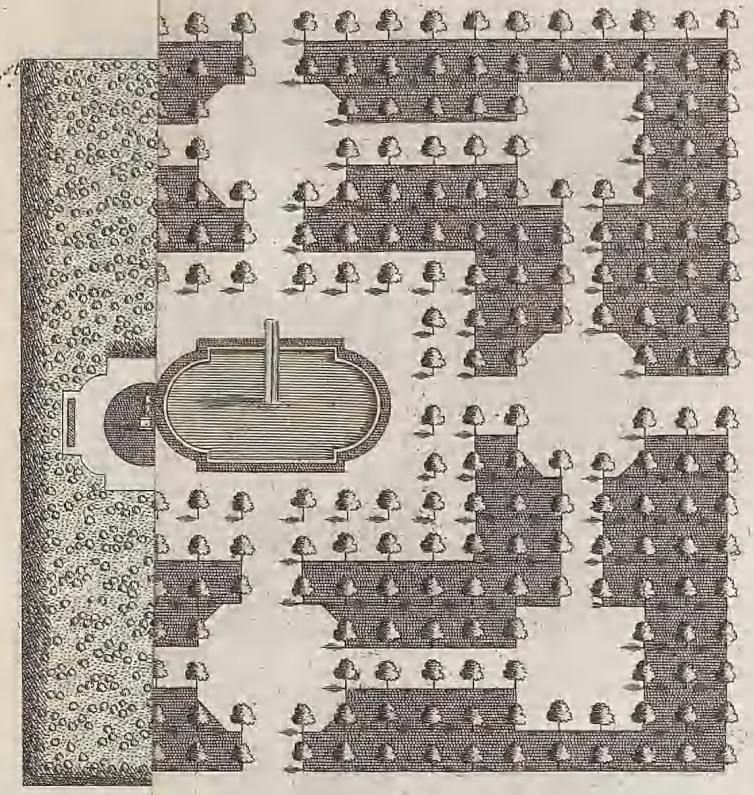


Pl: 4th C.

M. Vdr Gucht Scul:

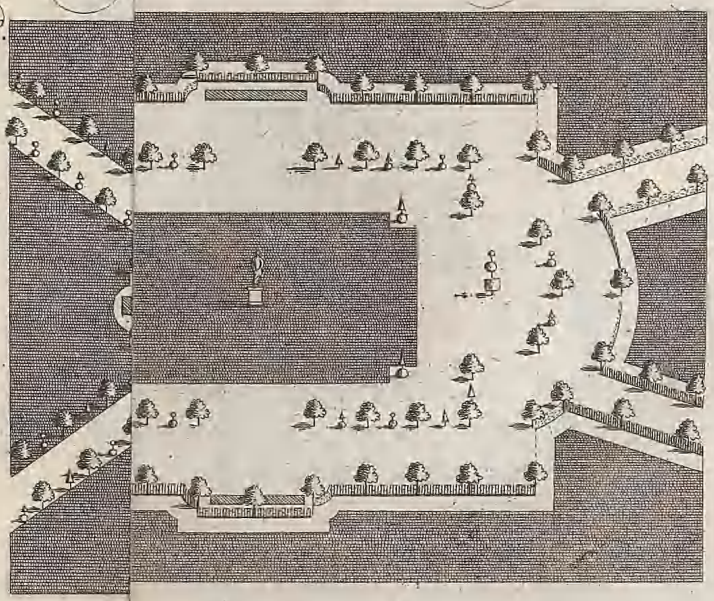
/ in Quincunce with Cabinets

fig. 1.



Agned with Palisades & green Borders.

fig. 2.



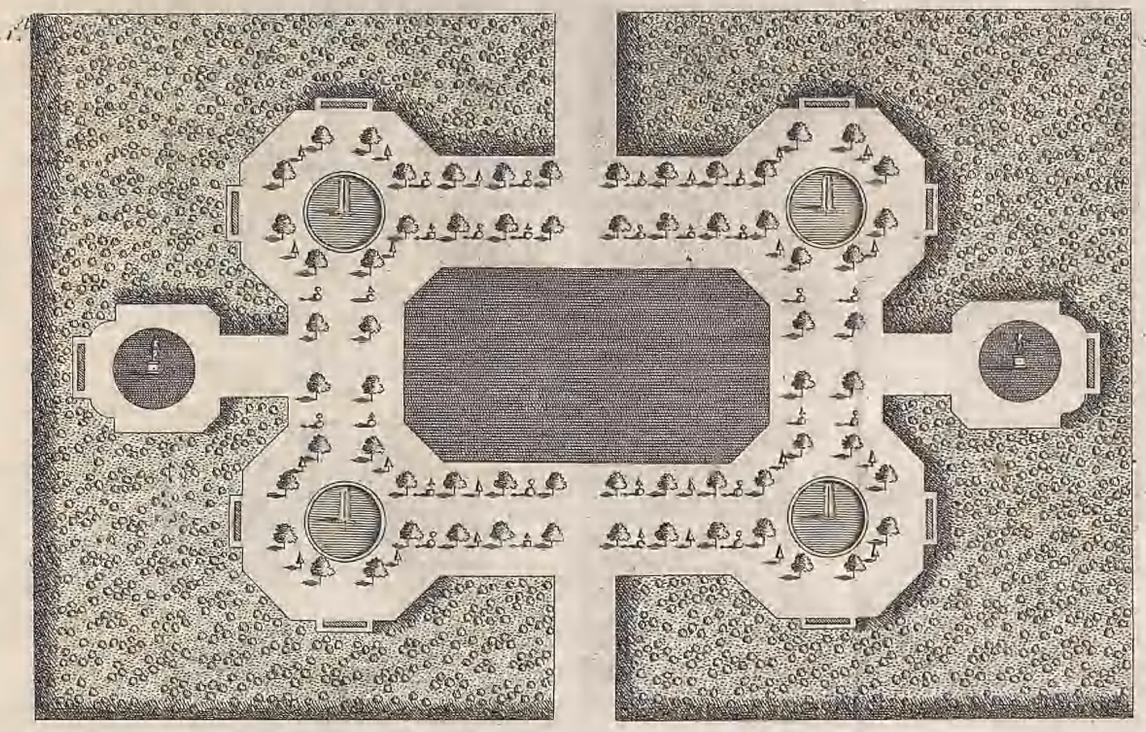
10 15 30 Fathom

Pl. 8. C.

M. V.de Gucht Sc.ul.

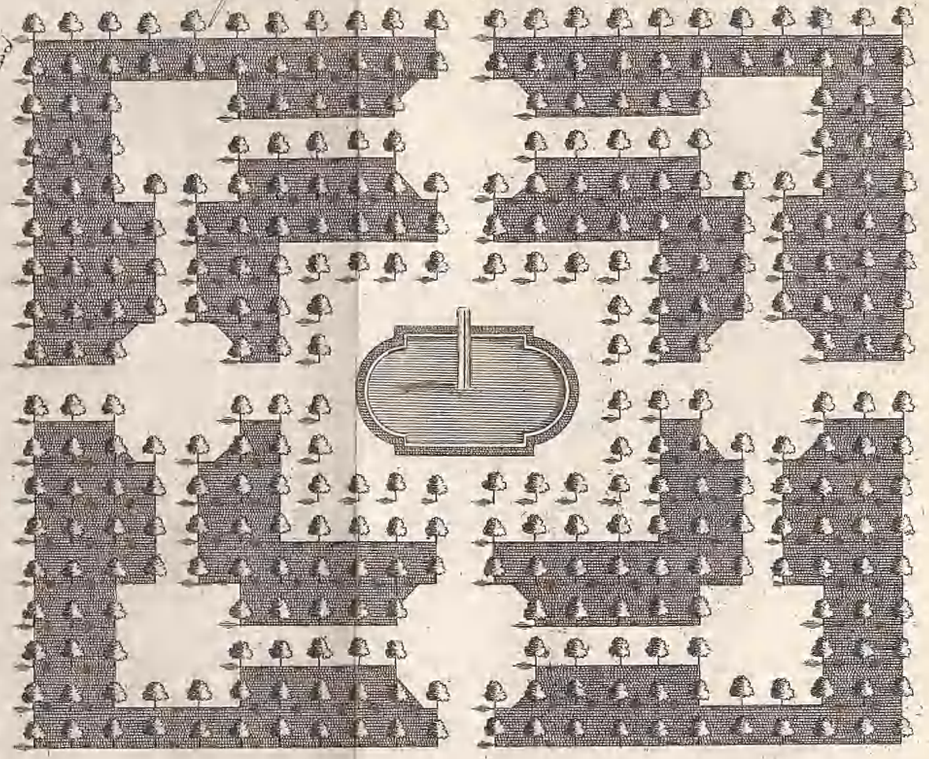
A great Hall of Horsechesnuts in a Wood.

fig. 1.



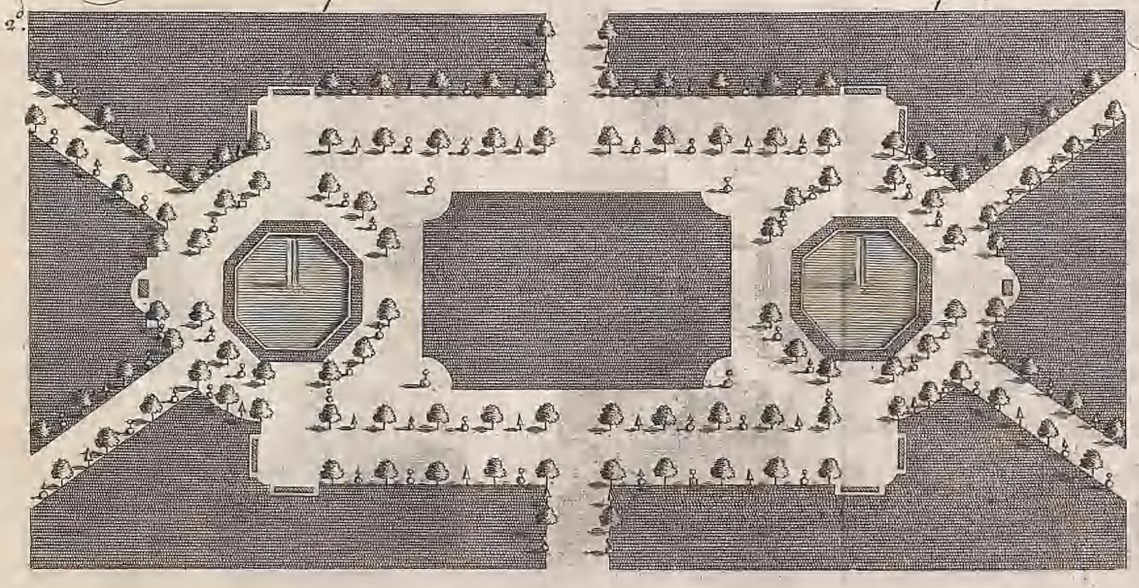
A Wood planted in Quincunce with Cabinets.

fig. 3



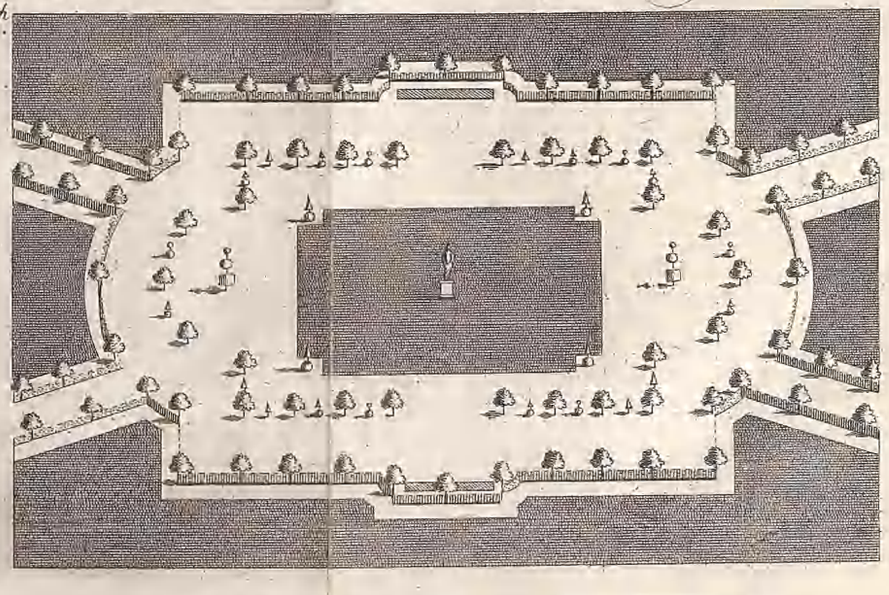
A great Hall of Horsechesnuts with borders of Grass.

fig. 2.



A Little Hall invironed with Palisades & green Borders.

fig. 4.th



5 10 15 30 Fathom

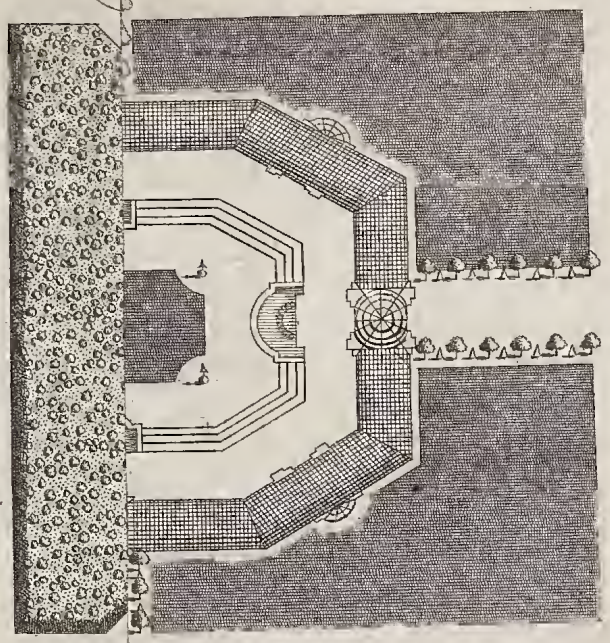
5 10 15 20 Fathom

Pl. 8. C.

M. V.d Gucht Sc.

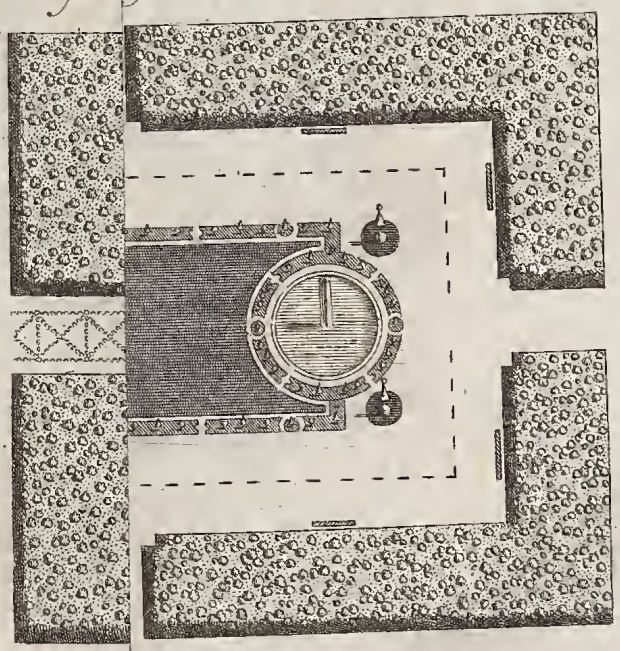
A Lattice-work surrounded th w Grassplots

fig: 1st



A smlisades cut into Arches.

fig: 2d



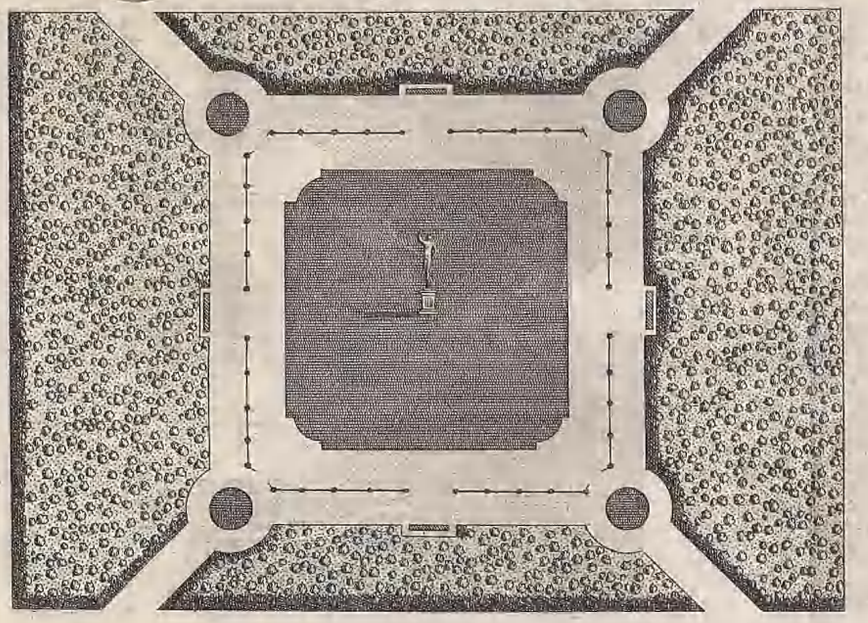
30 Fathom

Pl. th 9 C.

M. Vd Gucht Scul:

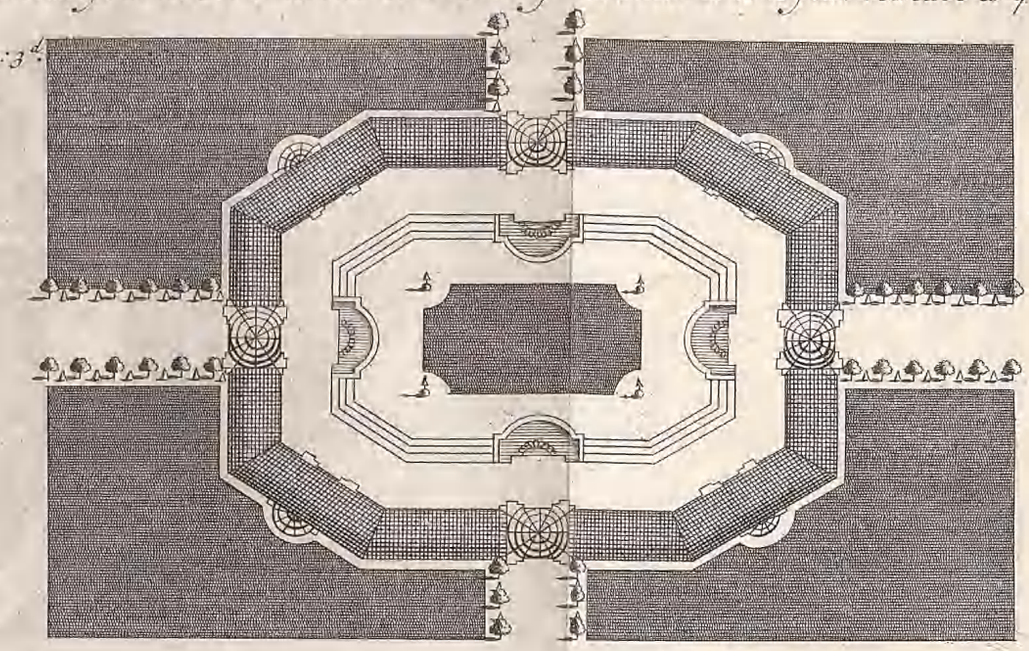
A large Cloister in ye middle of a Wood.

fig: 1st



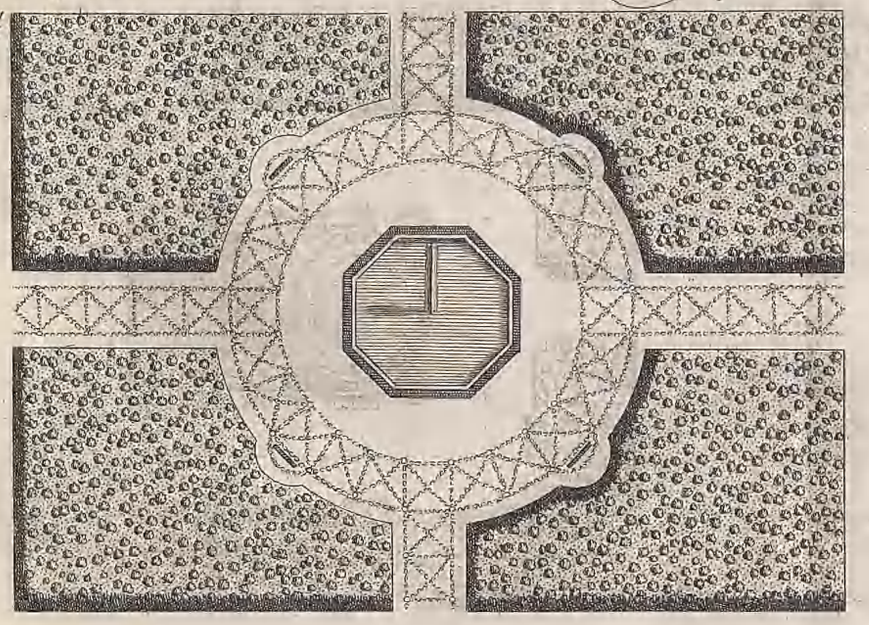
A Cloister cover'd with Arbours of Lattice-work surrounded with Grassplots.

fig: 3d.



A small Cloister with Arbours made by ye Trees.

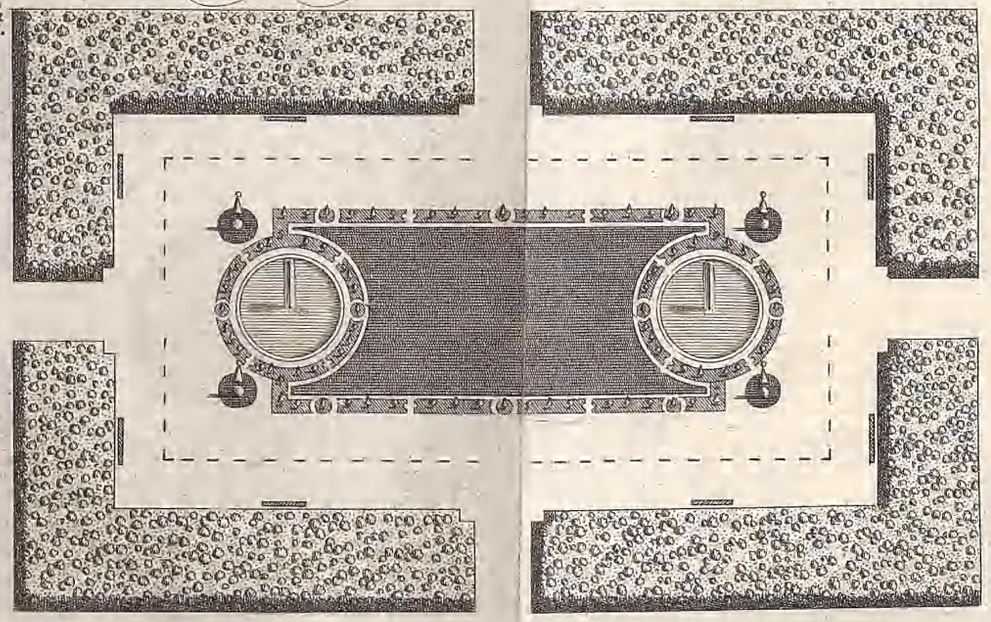
fig: 2d.



5 10 15 30 Fathom

A Cloister gallery with Palisades cut into Arches.

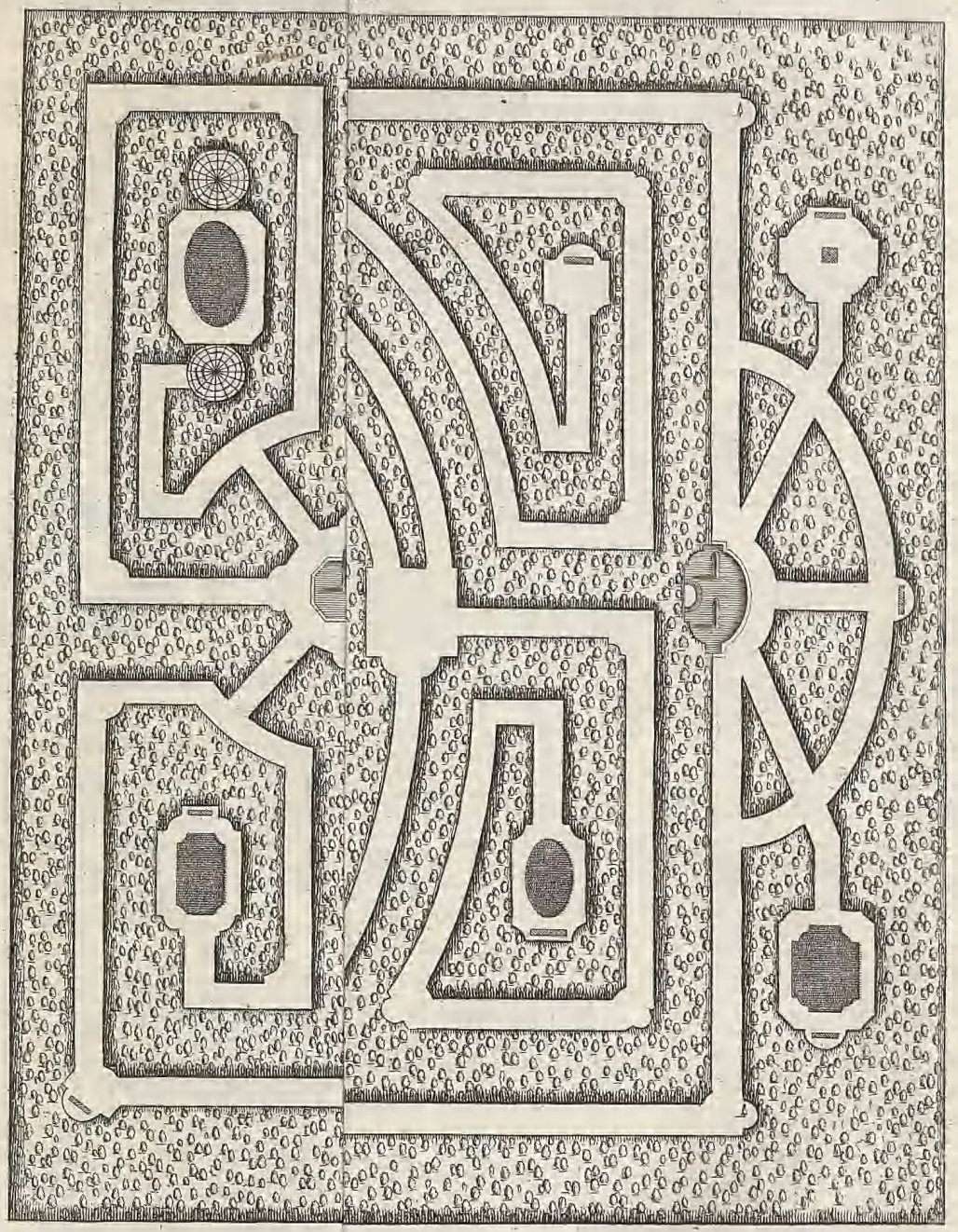
fig. 4th.



5 10 15 30 Fathom

Pl. 9th C.

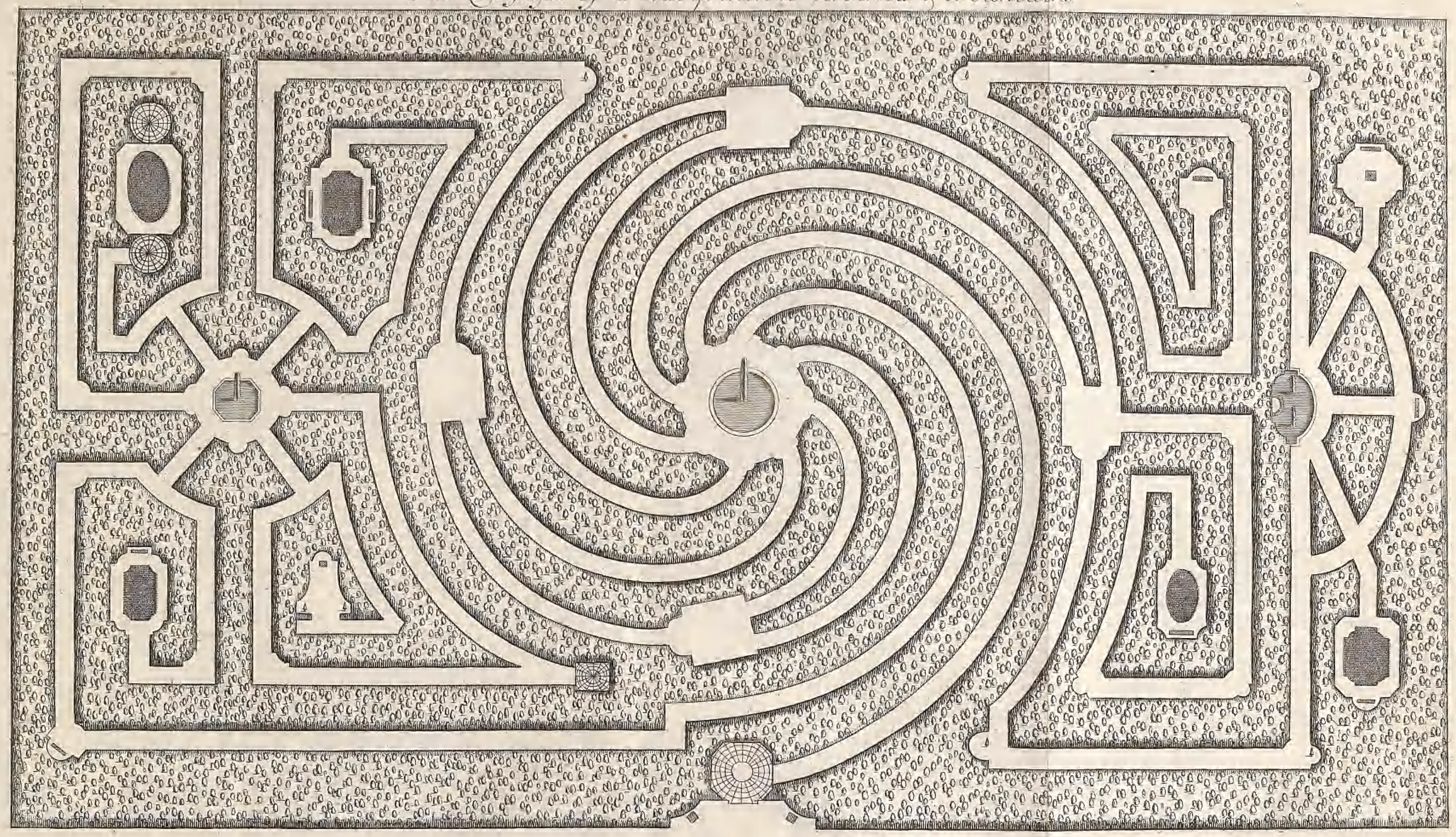
M. Vd Gucht Scul:



M. N.de Gucht Sculp.

Pl. 10th C.

The Design of a Labyrinth wth Cabinets & Fountains



M. Id^r Jucht Sculp:

5 10 15 30 Fathom

Pl. IVth C.

CHAP. VII.

Of Bowling-greens, or hollow Funds of Grass, of great Ascents, Slopes, Banks, and Flat-works of Turf, with the Manner of laying, sowing, and keeping the same.

THE Word *Bowling-green* is one of the most common Use in speaking of a Pleasure-Garden, and yet is that which is least understood, most People being ignorant of its true Signification and Etymology.

THE Invention and Original of the Word *Bowling-green*, comes to us from *England*. Many Authors derive it from two *English* Words, namely, from *Bowl*, which signifies a round Body; and from *Green*, which denotes a Meadow, or Field of Grass; probably, because of the Figure in which it is sunk, which is commonly round, and cover'd with Grass. Others will have it, that the Word *Bowling-green* takes its Name from the large Green-plots, on which they are wont to play at Bowls in *England*, and for which purpose the *English* take care to keep their Grass very short, and extremely smooth and eaven.

Dictionary of the French Academy.

Dictionary of Davilier.

Furetiere.

A BOWLING-GREEN in *France* differs from all this. We mean no other by this Word, than certain hollow Sinkings and Slopes of Turf, which are practis'd, either in the Middle of very large Grass-works and Green-plots, or in a Grove, and sometimes in the Middle of a Parterre after the *English* Mode; which makes some People confound the *Parterre à l'Angloise* with the *Boulingrin*, believing them to be the same Thing, because the Invention of these two Compartiments

partiments comes from *England*, and they are both cover'd with Turf. However, in Gardens we ought to diſtinguiſh, and not to uſe the Word indifferently for all that is Graſs-work, or improperly for other Parts of a Garden, as for large Flats of Graſs that are in Groves, unleſs they are ſunk hollow, for 'tis nothing but the Sinking that makes it a Bowling-green, together with the Graſs that covers it.

A BOWLING-GREEN is one of the moſt agreeable Compartiments of a Garden, and, when 'tis rightly placed, nothing is more pleaſant to the Eye. Its hollow Figure cover'd with a beautiful Carpet of Turf very ſmooth, and of a lively green, moſt commonly encompaſſed with a Row of tall Trees, with Flower-bearing Shrubs, make a delightful Compoſition; beſides the Pleaſure it affords us, of lying along upon its ſloping Banks, in the Shade, during the hotteſt Weather.

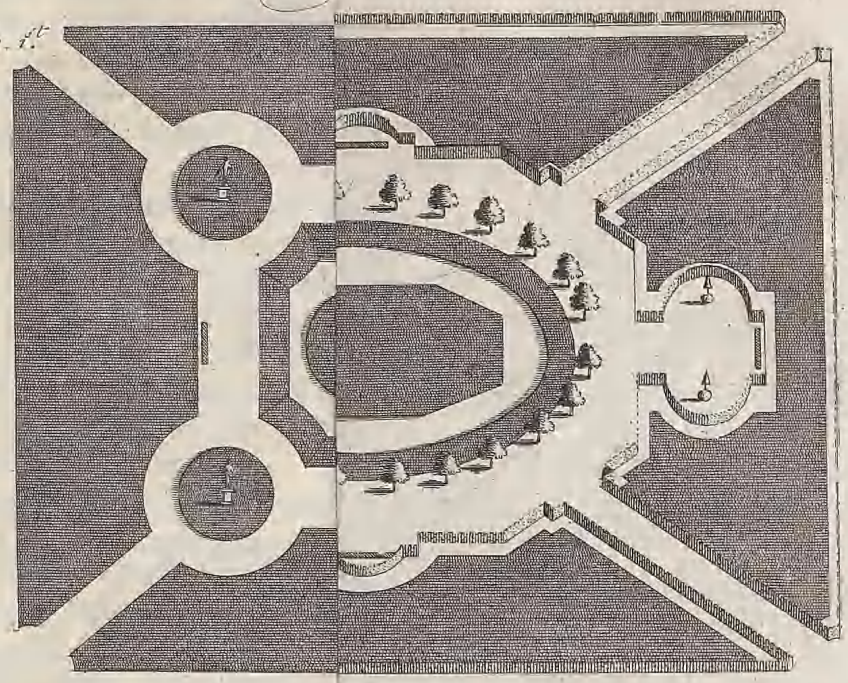
THERE are two Sorts of Bowling-greens, Plain, and Compoſed; the Plain are all Graſs-work, without any other Ornament; and the Compoſed are deck'd with Trees, Paliſades, Shrubs, and Box-work. One may alſo contrive, in the Bottom of them, a Baſon, or ſome Water-work, which is an extraordinary Embelliſhment.

THEIR right and moſt proper Situation is in a Place that is open and uncover'd, becauſe Bowling-greens are no Hindrance to the Proſpect; nevertheleſs, they may be placed in the middle of Groves, as may be ſeen in the different Examples of the following Plate.

THE Bowling-green repreſented in the firſt Figure, is of a much more conſiderable Extent than the others, and may be placed at the End of a large Parterre, or to fill up a great Space, that you would keep entirely open. 'Tis a long Square, the four Diagonal Outlets of which are terminated by four round Green-plots, where are placed the Figures of the four Seaſons. The Corners of the Bank are rounded off, to continue the Circular-walk round the Graſs-work; and in the Bottom of the Bowling-green is made a large Compartiment of Turf, which differs ſufficiently from the reſt. All the Alleys are made by the Graſs-work only, there

A Bowling Green adorned with Cabinets & Palisades

fig. 1st



A Bowling surrounded with a Palisade cut into Arches.

fig. 2d

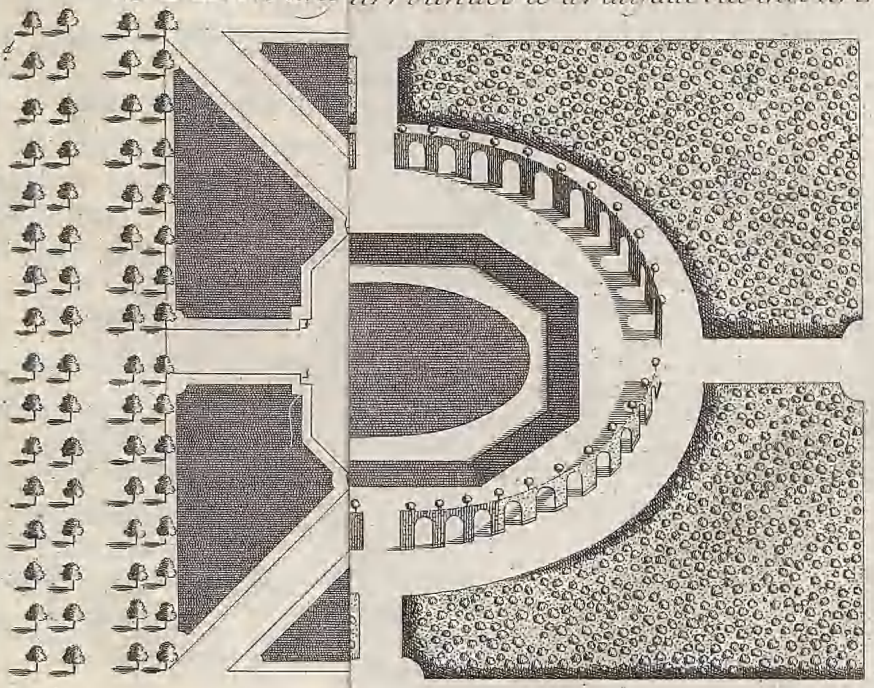
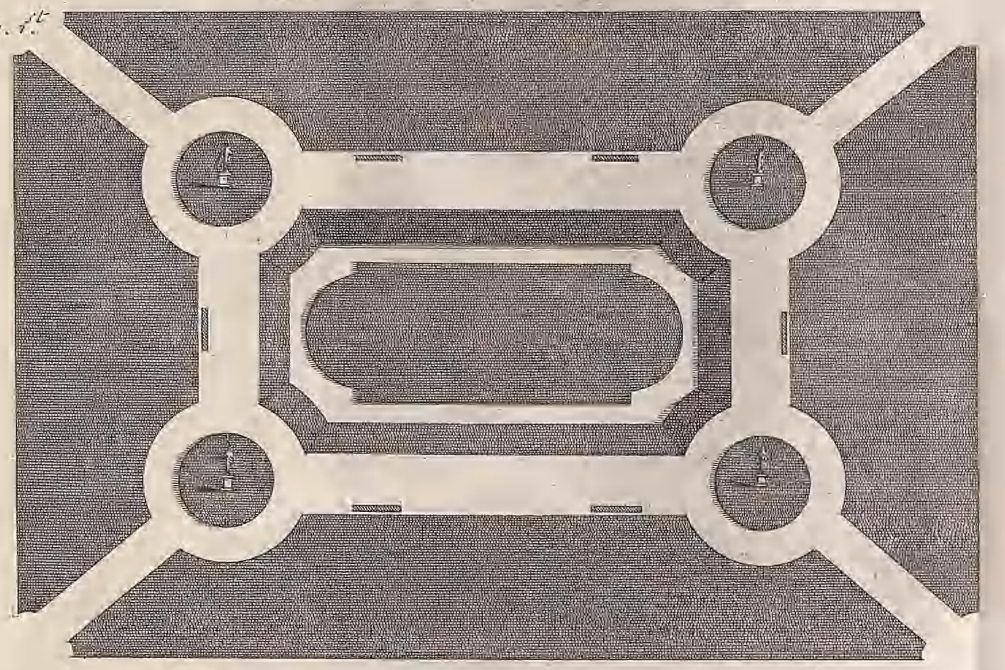


Plate D. Page 60 & 61.

M. Vdr Gucht Sculp.

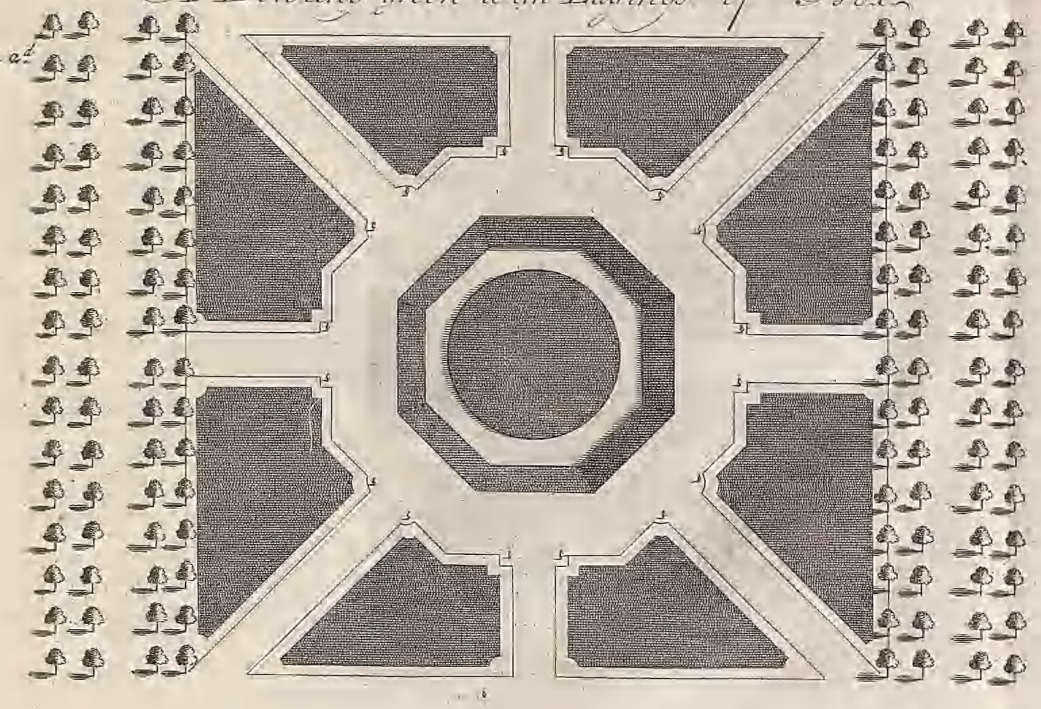
A Bowling green of Grass work only

fig. 1st



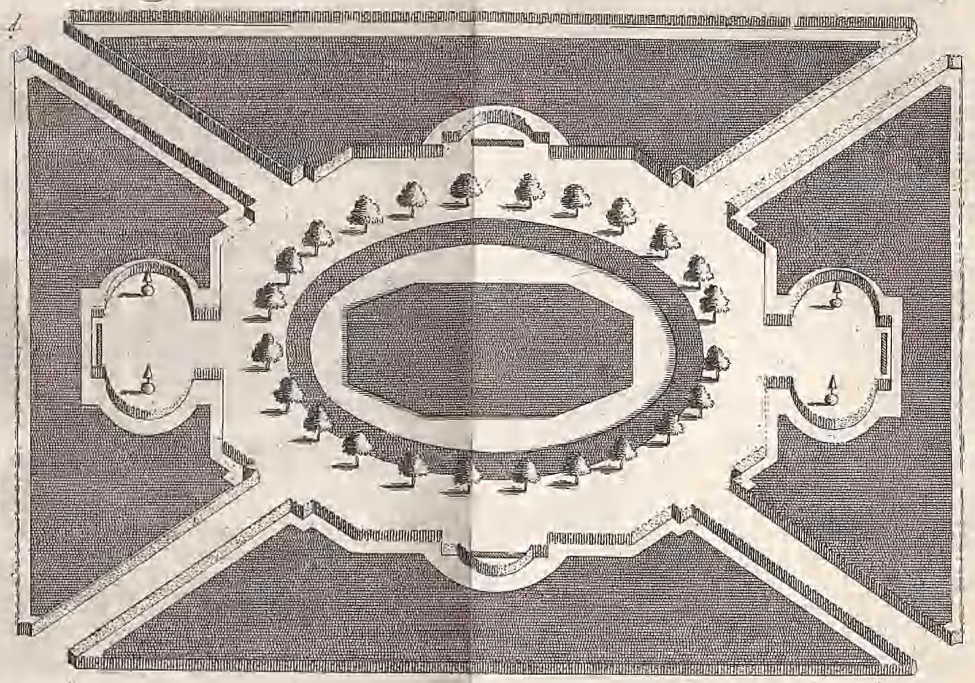
A Bowling green with Edgings of Box.

fig. 2d



A Bowling green invironed wth Trees & adorned wth Cabinets & Palisades

fig. 3d



A Bowling green in a Wood surrounded wth a Palisade cut into Arches.

fig. 4th

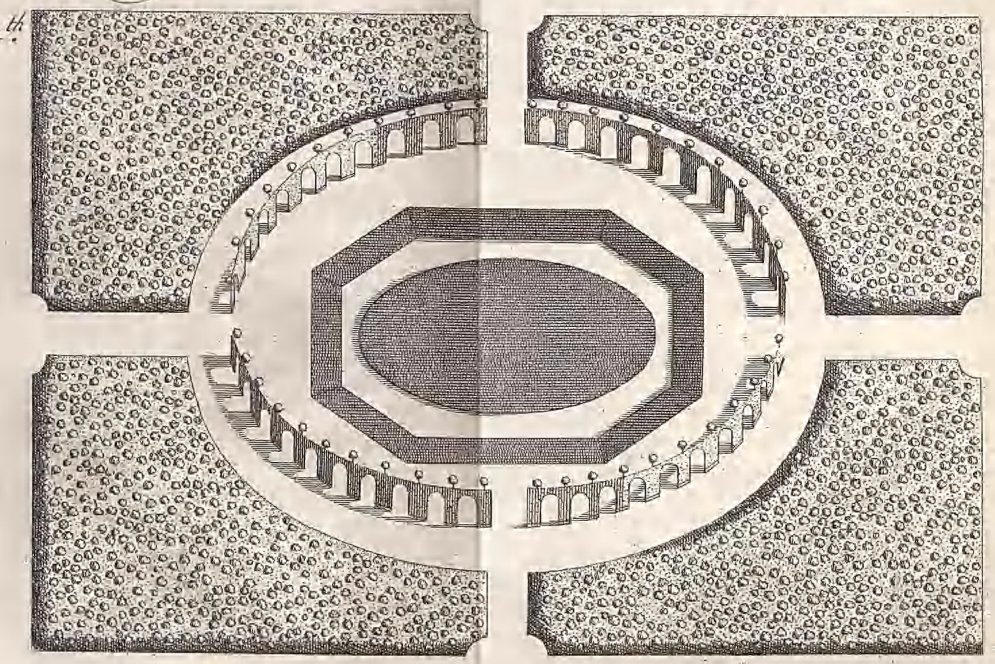


Plate D. Page 60 & 61.

5 10 15 30 Fathom

M. Vdr Gucht Sculp.

there being neither Trees, Paliſades, nor Wood, as in the other Deſigns that follow.

THE Bowling-green in the ſecond Figure is near a perfect Square, pierced in a Star, in the Middle of which is a regular Octogone, that has in its hollow Bottom a circular Graſs-plot. It is ſet out with only one ſingle Line, or Edging of Box, about each Piece of Graſs, and a ſmall rolled Path between. The Corners of all the Graſs-plots are chamfered out differently, and in thoſe of the Middle are planted ſixteen Yews, or round Heads of Box. This Bowling-green is accompanied with two great Double-walks planted with Horſe-Cheſnuts.

THE third Figure repreſents a Bowling-green ſtill more compoſed, and finer. 'Tis a great hollow Oval, in the Middle of which is a Graſs-plot cut in Cants, to make a Diverſity. This Bowling-green is ſurrounded with high Trees, as Horſe-Cheſnuts, or Lime-Trees, planted regularly, without interrupting the View of the Walks and Seats, which ſhould always be taken care of. The Walk about it is octangular, formed by a Paliſade Breaſt-high, where there are Cabinets and Niches for Seats. Behind the Paliſade are Green-plots, with a rolled Path of three Foot wide between them, as well to preſerve the Paliſade, and bound the Graſs, as to make it beautiful to the Eye.

IN the fourth Figure you diſcover a Bowling-green executed in the Middle of a Wood, where it does well enough, becauſe of the Opening that is made in it acroſs the arched Paliſade. 'Tis an irregular Octogone, whoſe hollow Part is ſet off with an oval Graſs-plot, and encompaſſed with a Double-walk, parted by a Paliſade pierced through with Arches, having Balls of Green left upon the Head of each Peer, that form a kind of Vaſe, and compoſe an Order of Rural Architecture, which renders theſe Sorts of Paliſades the moſt magnificent Part of a Garden.

IN making Bowling-greens, you ſhould obſerve not to ſink them too deep. It is ſufficient to allow a Foot and a half Depth for ſmall Bowling-greens, and two Foot at moſt for great ones.

As to the Banks and Slopes which inveſt Bowling-greens, that is, which form their Sinkings, they are allow'd ſix or ſeven Foot Length in the leſſer, and eight or nine Foot in the greater; and for the Bottoms in little Bowling-greens, we rake them all over, there not being room enough for Graſs-plots; but in great ones we make fine Compartiments of Graſs, and ſometimes of Cut-work. Then a raked Path of three or four Foot wide is left between the Slope and the Flat of Graſs, which ſerves to ſeparate and diſtinguiſh theſe Pieces each from other.

* *Fr.* Rampes, Tapis, *and* Pelouſes de Gazon.

*ASCENTS, Beds, and Flat-works of Graſs, differ but little from each other, unleſs it be the Aſcents, which are ſuppoſed to be large Graſs-plots upon a gentle Riſing, as thoſe along the Side of a Caſcade, or that ſerve to reconcile the Inequality of two Pieces of Ground. For thoſe we call in *France*, *Tapis* and *Pelouſes*, are one and the ſame Thing, and generally denote all plain Quarters of Graſs, or Green-turf, without Cut-work: They are uſed in the Courts of Country-Houſes, in Groves and Bowling-greens, in Parterres after the *Engliſh* Manner, and in the Middle of great Walks and Avenues, which, without them, would take up too much Time to rake and keep in Order.

THE *Talus* and *Glacis*, as we call them in *France*, are often confounded, and taken one for the other; nevertheleſs, there is a Difference between them, the *Talus* being more ſteep than the *Glacis*, which is ſuppoſed to be a very gentle Sloping, and almoſt imperceptible to the Eye. Let us now come to the Manner of covering all theſe Parts with Graſs.

THE Manner of covering with Graſs, differs according to the Place 'tis to be uſed in; for a Graſs-quarter or Green-plot is cover'd after another Manner, than a Bank or Slope, in that one is often ſown with Hay-ſeed, and the other laid with Green-turf.

TO ſow Graſs, the Ground muſt be firſt dug, or broke up with an Iron-ſpade, and being afterwards dreſſed and laid eaven, let it be raked over with a fine Rake, removing all the Clods and Stones you meet with, and ſtrowing on the Top of it one Inch Thickneſs of good Mold, to facilitate the

the Growth of the Seed. The Place being thus prepared, ſow your Seed on it very thick, that it may come up as cloſe and ſhort as may be; then paſs the Rake over it again, to bury and cover the Seed a little, which ſhould not be ſown in windy Weather, leſt it be blown away; on the contrary, you ſhould chooſe a mild Day, rather inclin'd to wet, that the Rain forcing down the Earth, and ſinking the Seed, may cauſe it to ſhoot up the ſooner.

THE beſt Seaſon for Sowing is the End of Autumn, Seed in its own Nature requiring nothing but Moiſture to make it grow, which it cannot fail of in this Seaſon, nor all the Winter long. When you ſtay to the End of *February*, or the Beginning of *March*, before you ſow your Seed, you run a Risk of not ſeeing your Quarters green ſo ſoon, if the Summer proves any thing dry, as it often happens, unleſs you take care to give them continual Waterings, or rather to lay them under Water, which is a very great Slavery and Expence.

ALL the Difficulty of making a fine Green-plot by ſowing it, lies in getting good Seed, which ought to be carefully examin'd before 'tis ſown. What they make uſe of in *France*, is the Seed of fine *Dutch* Clover-graſs or Trefoil, Hay-ſeed of low Meadows, Sainfoin, Catmint, and that of fine ſmall Graſs, reſembling Civet. There are alſo abundance of other Seeds for this Purpoſe, whoſe Names are unknown, and in which one is often deceiv'd.

In England *we ſow only Hay-ſeed of the fineſt Upland Paſtures, well cleanſed and ſifted.*

YOU ſhould not do, as many, that will gather their Seed from ſome Hay-loft, and ſow it without Diſtinction, hoping by that means to make a fine Graſs-plot; in this they are greatly miſtaken, for the Seed ſhooting too high, and making large Stalks, the lower Part remains naked and bare, and mow it as often as you will, will never make handſome Graſs; but on the contrary, come to nothing but Tufts of Weeds and Quich-graſs, very little better than that of the common Fields.

AS to the Manner of laying Turf, you ſhould, in the firſt place, make Choice of the beſt in the Country, either from Road-ſides, or the Edges of Paſtures and Meadows where Sheep and Cows feed; for in theſe Places, generally,

the Grafs is finefl, and browzed fhorteft. In the Choice of it, Care fhould be taken that you avoid Quich-grafs, and other Weeds, and that the Earth have fomething of a Body. *This Turf we raife with a Spade, cutting it into Squares about a Foot every way, and two or three Inches thick, which is enough to carry them without breaking.

* *In* England *our Turf is raifed, with a Raifing-knife for that Purpofe, in Squares of* 3 *Foot long, and* 12 *or* 14 *Inches broad.*

To lay the Turf upon the Work, you muft ftrain the Line along the ftrait Parts, and follow the Trace in the circular and fmall curious Defigns, as the Shell-work, Scrolls, and Knots of Parterres. The Line being ftrained, you are to dig and clear away the Earth, to receive the Thicknefs of your Turf, that it may lie level with the Ground, which is the great Beauty of it: The Manner of fome who lay their Turf upon the Surface, without taking away the Earth, is to be avoided; for this raifes it too much, and lays bare the Roots of it. You are to trim the Squares of Turf to the Line, or Trace, as your Defign is, with a Knife, laying them in Order, as clofe to one another as poffible, and afterwards beating them with a Wooden Beater, till they lie very flat and level with the reft of the Ground. You can fcarce beat and fink the Turf too much, indeed, the Grafs being always naturally difpofed to raife itfelf fufficiently in growing. Where the Squares of Grafs do not join well together, you muft fill in a little Earth, and then ftop the Holes and Chinks with fmall Pieces of Turf, which will make the Green-plot as eaven and handfome, as though it had grown in the very Place.

You muft obferve to water the Turf well as foon as 'tis laid, that uniting itfelf the fooner with the Ground on which it lies, it may take Root, and not have Time to dry and turn yellow, as is to be feared, if you fail to water it.

The fureft way to have a handfome Grafs-plot, fmooth, and well cover'd, is to lay it with Turf, which is always better than fowing; but when you have very large Green-plots to make, as it would be an endlefs Charge to lay them all over with Turf, you muft be content to fow them with the beft Seed you can get, and becaufe it is very troublefome to bound them to any Exactnefs by fowing, you may edge the Sides

Sides and Extremities with ſquare Turfs laid by the Line, and ſow the Inner-part with Hay-ſeed.

If you would not be at the Expence of laying the Edges of a Graſs-plot with Turf, you muſt then ſow a good deal of Seed in the Track of the Out-line, that it may be the ſooner and better diſtinguiſh'd. As for ſmall Pieces of Graſs-work, as the Knots, Shell-work, and Volutes of Parterres, Cut-work, Verges about Baſons, *&c.* they muſt be ever laid with Turf, which is much the handſomer, is more neatly perform'd, and better kept.

*THE Bank and Slope are much more difficult to cover with Turf, than the Aſcents, Quarters, and Flats of Graſs, in that the Turf muſt be laid ſo that it does not ſlide, and that the Slope-line be kept without Elbows and Inequalities.

* *Fr.* Talus *and* Glacis.

BANKS and Slopes that are not ſo conſiderable, as five or ſix Foot high, ſuch as thoſe made for ſmall Terraſſes, and the Sinkings of Bowling-greens, are the moſt eaſy to cover, there being no more to be done in them, than to lay on the Squares of Turf, according to the Rules I have juſt now deliver'd.

YOU ſcarce ever ſow Banks and Slopes, becauſe the Graſs comes not up ſo well on them, as on Flat-works: However, if you have a mind to ſow them, you ſhould lay a Verge, or Border, at the Head and at Foot, with Squares of Turf, which will keep up the Earth, and hinder it from ſliding; and then ſow the Middle very thick, that the Graſs may not come up in Knots and Cluſters.

FOR great Banks and Slopes, as thoſe from fifteen to twenty Foot high, they require more Circumſpection in the Method of lining them with Turf, for fear they ſhould ſlide. Theſe are made with Beds of Earth and Watled-work, as ſhall be explain'd hereafter.

THE Turf made uſe of for this Purpoſe, ſhould be raiſed in the Shape of a Wedge, and not of equal Thickneſs, as that with which you cover common Quarters; we call this, * Turf with a Point or Tail. This Point which is left on the Lower-part, ſerves to bed it in its Place, and to keep it from ſliding. You lay this Turf along the Line,

* Gazon à queue.

ſtrained according to the Work, ſo that one End of it touch the Line, and the other the Hurdles, or Watled-work, obſerving, according to ſome, to turn the Graſs-ſide undermoſt, which is proper only in Fortifications; and not in the Slopes of Gardens, in which the Turf is always fix'd with the Graſs uppermoſt, laying it according to the Slope-line with the Precaution, for fear the Turf ſhould ſlide, to peg it all with good Pegs of Oak, or Alder, to keep it in its Place till it has taken Root.

QUARTERS and Slopes of Graſs make one of the principal Beauties of a Garden, when they are well kept, which is all the Difficulty; for when the Seed is well come up, and the Graſs very thick, or that the Turf be recover'd, and of a beautiful Green, this Perfection will change in a ſhort Time, if Care be not taken to keep it well.

THIS Keeping conſiſts in mowing the Graſs often, not four times a Year, as ſome Authors mention, but, at leaſt, once a Month. In ſome Places they mow it every Fortnight, the Graſs growing thicker, and looking handſomer the oftner it is cut. It ought to be ſo cloſe and eaven, that no one Blade, if I may ſo ſpeak, ſhould exceed another. You muſt likewiſe, from Time to Time, cut and pare away the outer Edge of the Graſs according to the Line; for without this, it will often exceed its Bounds, and run into the Walks, which would interrupt the Figure and Deſign of the Compartiments.

THE Way they keep their Graſs in *England*, is to mow it very often, and to beat it when it is too high, rolling the Surface of it with great Cilinders, or Rolls of Wood or Stone, to ſink and level it as much as poſſible. You can't do better than to follow this Method uſed in *England*, where their Graſs-plots are of ſo exquiſite a Beauty, that in *France* we can ſcarce ever hope to come up to it.

IT may be truly ſaid, that if handſome Graſs-plots are great Ornaments in a Garden, they are ſuch as require the greateſt Care of the Gardener, who ought to be almoſt conſtantly attending them; but, after all, 'tis a thing indiſpenſably neceſſary, for if they are neglected, the Graſs growing up in Tufts, will no longer form ſmooth and eaven

Quarters,

Quarters, but will run into Quich-grafs and Weeds, which you muft entirely deftroy, and lay or fow others anew. You have then no other way to avoid the Inconveniency of changing your Grafs every two or three Years, but by the great Care you employ to keep it well.

SOME Perfons pretend, that to have Green-plots always handfome and in good Order, you fhould every Year, in Autumn, lightly ftrow fome Seed upon them to renew them, and furnifh the Places that are not well filled, or where the Grafs is dead; and this Method may be very good, provided a good Choice be made of the Seed you fow.

Chap. VIII.

Of Porticos, Bowers, and Cabinets of Arbor-work, Figures, and other Ornaments, ſerving to the Decoration and Embelliſhment of Gardens.

ALTHOUGH I have juſt now ſpoke, in general, of all the Parts that conſtitute a fine Garden, I ought not, however, to omit ſaying ſomewhat alſo of what ſerves to its Decoration and Embelliſhment. In this I ſhall be very circumſpect, being unwilling, here, to propoſe Examples out of the Reach of private Perſons, who might poſſibly find Difficulties that would hinder the Execution of them.

The Charges I am now going to ſpeak of, demand a Royal Purſe, and are to be undertaken only by Princes, Miniſters of State, and Perſons of the higheſt Quality.

'Tis not ſo much the Faſhion at preſent, to make Porticos, Arbors, and Cabinets of * Lattice-work, in Gardens, yet they ought ſtill to be made in ſome Places; and 'tis certain, theſe Pieces of Architecture, well diſpoſed, have ſomething in them very beautiful and magnificent; they raiſe and improve the natural Beauty of Gardens extremely; but as they are very chargeable to make and keep up, and continually liable to decay, moſt People are out of Conceit with them.

* Treillage.

There have been Works of this Kind done in ſome Gardens formerly, that coſt at leaſt twenty thouſand Crowns, which are now almoſt entirely ruin'd, there being nothing

As at the Hôtel de Condé, *and that of* Louvois.

nothing but the Abundance of Iron that can keep them up any considerable Time.

ARBORS are distinguish'd into two Sorts, Natural, and Artificial: Natural Arbors are formed only by the Branches of Trees artfully interwoven, and sustain'd by strong Lattice-work, Hoops, Poles, *&c.* which make Galleries, Porticos, Halls, and green Vistas, naturally cover'd. These Arbors are planted with Female-Elms, or *Dutch* Lime-Trees, with Horn-beam to fill up the Lower-part; these Sorts of Trees easily yielding, and, by the great Quantity of their small Boughs, forming a very thick Brush-wood. You should observe, above all Things, never to bend these Trees till the second or third Year after they are planted, lest, in so doing, you disturb their Roots too much, and hinder them from striking firmly into the Earth.

The Arbors at Marly *are wonderful in this Kind.*

ARTIFICIAL-ARBORS and Cabinets are made wholly of Lattice-work, supported by Standards, Cross-rails, Circles and Arches of Iron. For this Purpose they make use of Fillets of Oak, somewhat more than an Inch square every way, which being well plained and made strait, are wrought into Checkers of six or seven Inches square, and fasten'd together with Iron-Wire. They make use likewise of Wainscot for the Moldings and Ornaments of Cornices, and of Quarter-Stuff for large Plinths and Facias.

WITH this Wood and Iron are composed Arbors, Porticos, Galleries, Cabinets, Summer-Houses, Salons, Banquetting-Rooms, Niches, and Shells, adorn'd with Columns, Pilasters, Cornices, Pedaments, Jambs, Pannels, Vases, Corbels, Copings, Domes, Lanterns, and other Ornaments of Architecture; in all which Designs, a just Proportion ought to be observed, and every Part of the Ordonance should be regulated and determin'd by a Module, as though it were a Building.

'TIS to be observed, that the richest Ornaments are not the most proper for Lattice-work, because they are too difficult to be executed in Wood; there are some that are more peculiarly appropriated to them, which do exceeding well

There are Ionick *Columns, in a Cabinet of Lattice-work at* Clagny, *that are pretty enough.*

well in Work. Columns are generally left out in this Business, and Pilasters made use of in their stead, or else, Upright Peers with Pannels. The *Ionick* Order is the most suitable to Works of this Kind, and the most easy to be put in Execution.

AN Arbor is distinguish'd from a Cabinet or Summer-House, in that the former is of a great Length, arched over Head in form of a Gallery; and the latter is of a Figure either square, circular, or in Cants, making a kind of Salon fit to be set at the two Ends, or in the Middle of a long Arbor.

A PORTICO is still different from all this; being the Entrance in Front of a Summer-House, Salon, or Arbor of Lattice-work, and is generally adorn'd with a handsome Cornice and Frontispiece, supported by Pilasters or Peers; or else it is a long Decoration of Architecture placed against a Wall, or at the Entrance of a Wood, where the Advances and Returns are but inconsiderable.

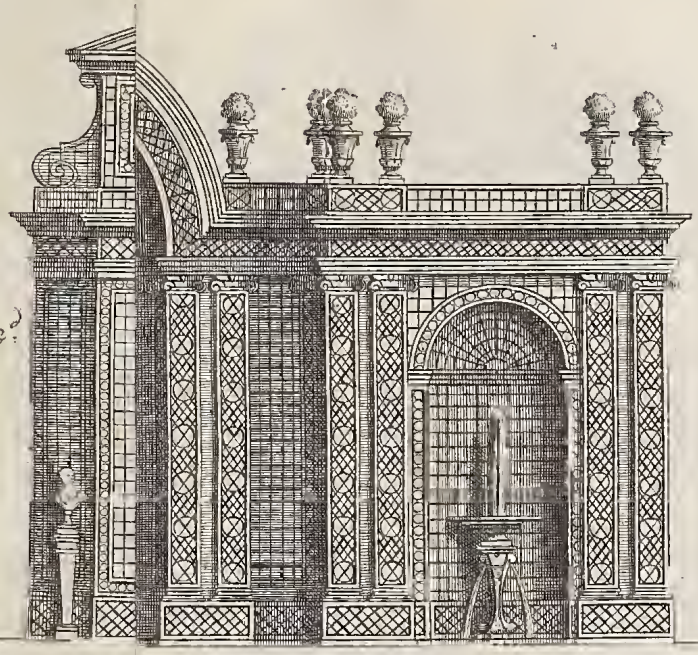
ARBORS, Cabinets, and Porticos of Lattice-work, are commonly made use of to terminate a Garden in the City, and to shut out the Sight of Walls, and other disagreeable Objects; this Kind of Decoration making a handsome Sight, and serving very well to conclude the Prospect of a principal Walk. They are likewise used in Groves, Sinkings, and Niches, where Seats and Figures are proper to be set, and are often cover'd with Rose-Trees, Jasmins, Hony-suckles, and wild Vines, for the Conveniency of Shade.

ABOVE all, a Portico, or Arbor of Lattice-work, should have a handsome Frontispiece at Top, that Part being the most remarkable: Of this you have several Examples in the following Plate, which contains all the several Sorts of Lattice-work, and the most agreeable Ornaments that can be given them.

THE first Figure is the most magnificent, and compounded of all: 'Tis a large Portico of Trellis of the *Ionick* Order, consisting of several Coupled Pilasters, which sustain a handsome Cornice, with a small Plinth at Top of it, in manner of an *Attick*, adorn'd with Vases set perpendicularly over each Pilaster. In the Middle is a great Recess, or Sinking,

A Smal ork.

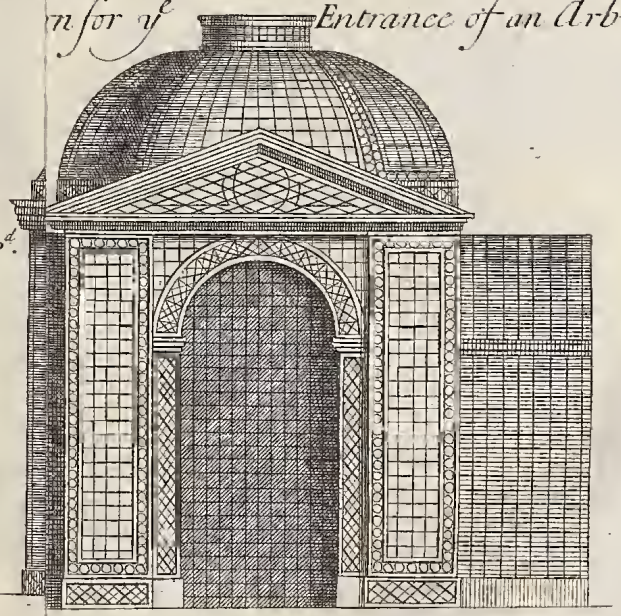
fig: 2d.



A Cabinet of 3 4 Fathom.

n for ye Entrance of an Arbor.

fig: 3d.



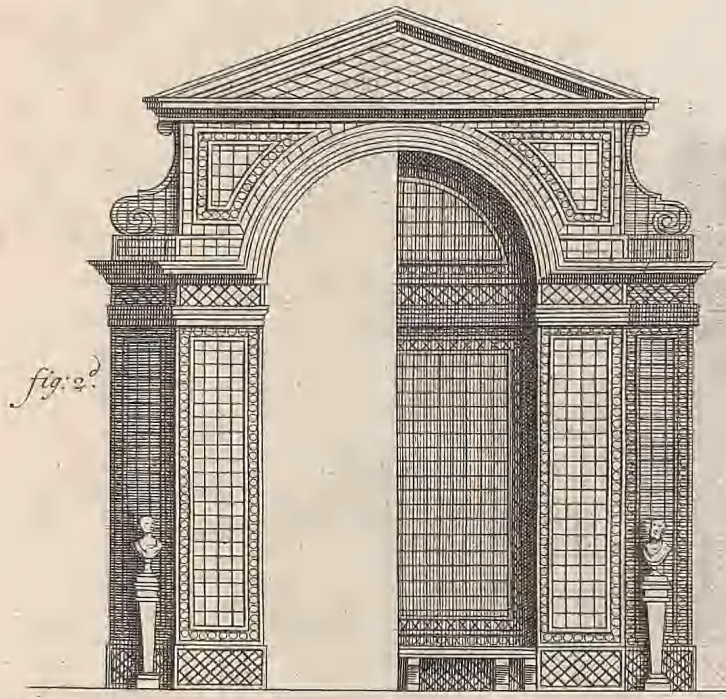
1 2 3 Fathom.

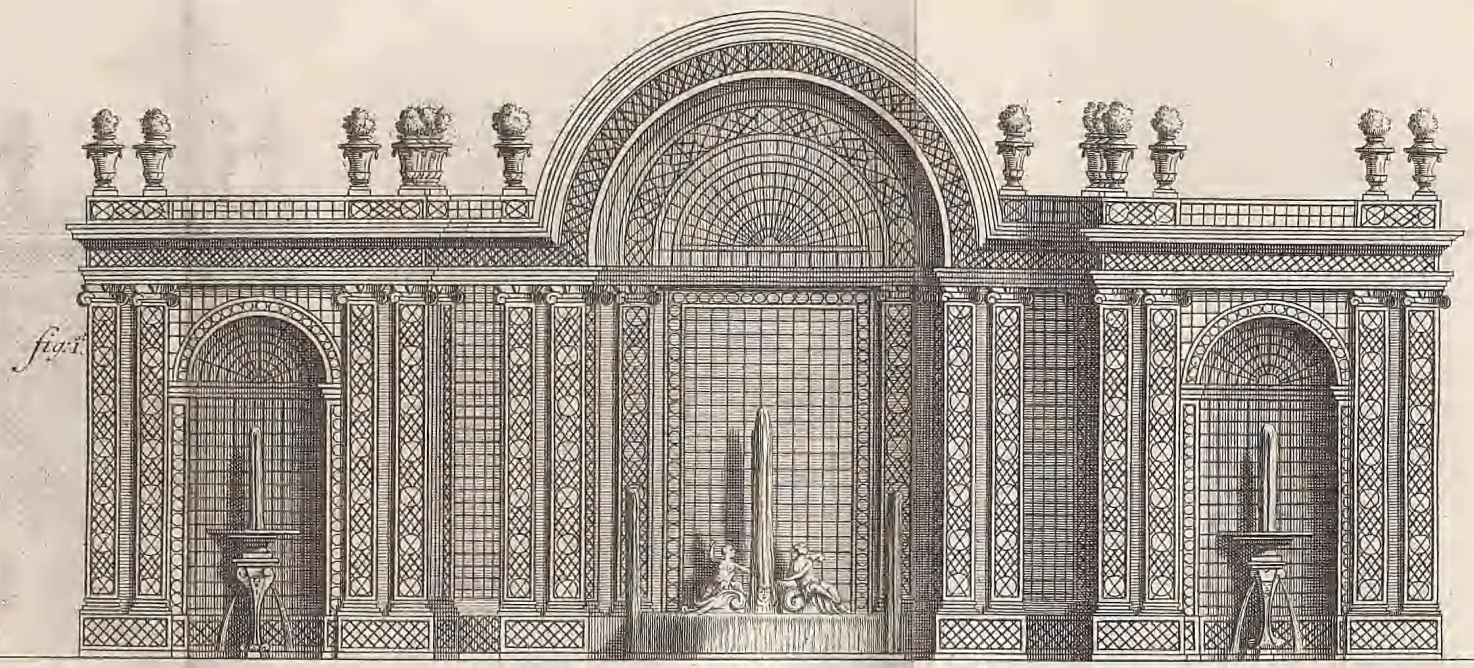
Plate E. Page 70 & 7

M. Wd. Gucht Scul:

A Small Portico at ye entrance of a Wood.

A Large Portico of Arbor-Work.



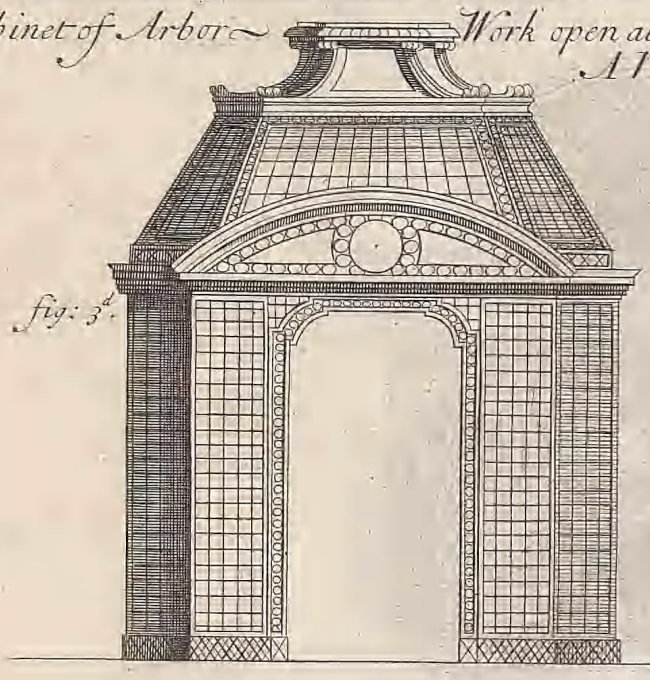


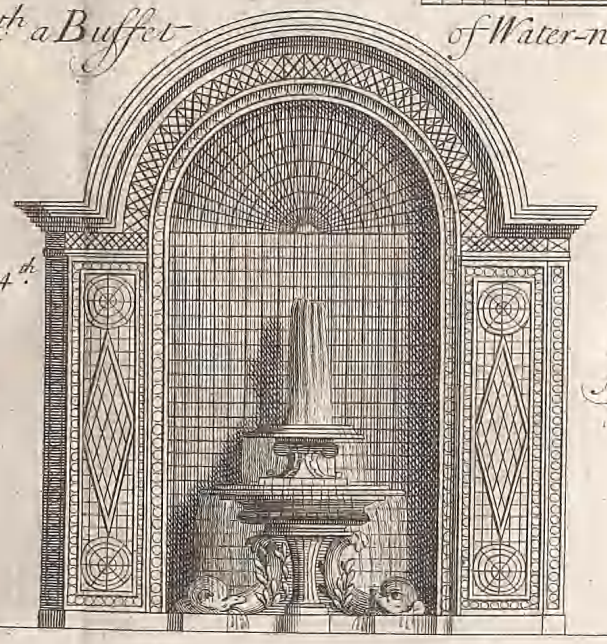
A Cabinet of Arbor-Work open at top.

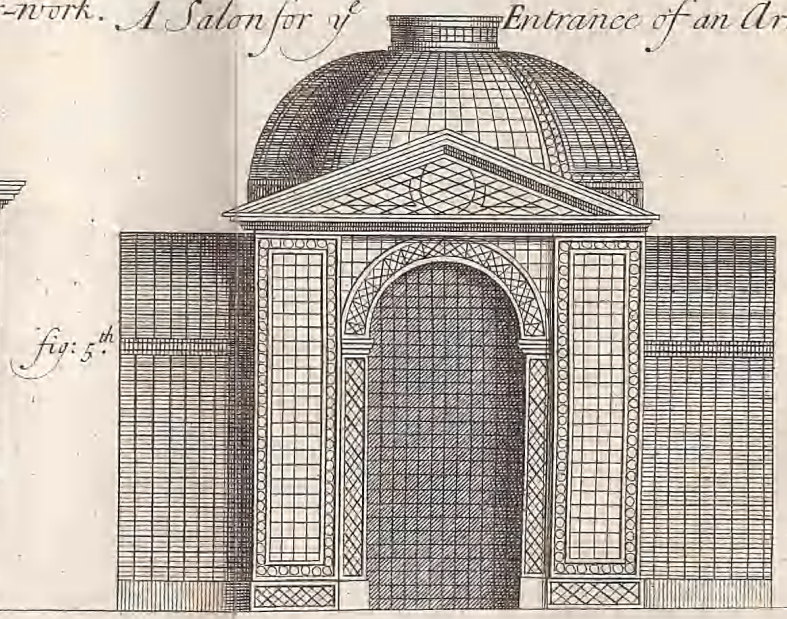
A Niche wth a Buffet of Water-work.

A Salon for ye Entrance of an Arbor.

1 2 3 4 Fathom.







1 2 3 Fathom.

1 2 3 Fathom.

1 2 3 Fathom.

Plate E. Page 70 & 71.

M. Vdr Gucht Scul:

Sinking, crown'd with an Arch, which has the ſame Cornice and Ornament of Borders continued round it. The lower Part of this Hollow is filled with a Baſon that poſſeſſes the whole Breadth of it, out of which riſes a Water-ſpout of ſix or ſeven Foot high, between two ſmall Figures that lie upon Scrolls, ſet upon a high Step or Plinth, from whence the Water falling, makes a round Sheet, that is alſo accompanied with two other Spouts on the Sides. At the two Extremities of this Portico, are two circular Niches, each of them filled with a Salver of Water ſet upon a Stand, which is adorned with three Mask-heads, that throw the Water into the Baſon below. All this Trellis is beautified with Rounds, Lozenges, Moldings, Fillets, and other very rich Ornaments, the Proportion of which may be found by the Scale. I ſhould have given you the Plan of this, would the Size of the Plate have permitted. This Portico may ſerve very well at the Bottom of a City-Garden, or at the End of a long Walk, the two Niches at the Ends being made to face the Counter-walks.

THE Portico repreſented in the ſecond Figure is leſs conſiderable, both in its Extent and Ornaments, having no Order of Architecture in it; notwithſtanding which, it will look very well, when executed. It would be proper, likewiſe, at the lower End of a Garden, or of a long Walk, placing a Seat in the Hollow of it; or, if you will, it may ſerve for the Entrance of a Wood, opening the middle Arch, as you ſee in one Half of the Deſign. This Portico conſiſts only of upright Jambs, or Peers, and Pannels of Lattice, with the ſame Cornice as that of the great Portico before-deſcrib'd. Its Frontiſpiece is a great Arch, with a triangular Pedament over it, which is ſuſtain'd at the Ends by Spandrels and Scrolls; it is ſet off below with two Stands, or Pedeſtals, that carry Buſts. The Scale of the great Portico is common to both, and will inform you in what you require farther.

IN the third Figure is a Cabinet, or Summer-Houſe of Lattice-work, proper to be ſet in a Grove, or at the End of an open Walk. Its Figure is in Cants, and of a Deſign ſomewhat particular. 'Tis ornamented with plain Pannels,

and a circular Pedament; over which rises a Cap in Cants also, which carries a Lantern open at the Top, as the Tympan of the Pedament is in Front.

THE fourth Figure is a great circular Niche very rich throughout, its Jambs being full of Ornaments, and crown'd with a fine arched Cornice, which encompasses a Shell formed by several Ribs. The Hollow of the Niche is filled with a Buffet of Water, consisting of a Vase, or great Salver, the Cup of which rests upon Scrolls made by Dolphins-Tails, and the Water falls by two Sheets into the Bason below. This Niche would do very well in a Wood, or at the End of some Walk, where the Prospect can be continued no farther.

THE Salon in the fifth Figure serves for a Portico and Entrance to a long Arbor, in which 'tis supposed to stand. It is very plain in its Ornaments, consisting of no more than two Jambs, with an Arch adorn'd with Imposts, and a circular kind of Architrave; the whole crown'd with a triangular Pedament, upon which rises a Dome arched over, and open at Top.

I THINK it needless to give you here any Designs of Cabinets of Trellis-work altogether plain, and without Ornament; because, if you have a Mind to make such, and would set them off with a Cornice or handsome Frontispiece, you may easily pick them out of the foregoing Designs, and place them as Occasion requires.

LET us now proceed to other Ornaments, that contribute to the Decoration and Embellishment of Gardens.

OMITTING those of Greens, as Palisades, Halls for Comedy and Ball, Galleries, Amphitheatres, *&c.* of which I have spoken before, and which are indeed the most essential Ornaments, as they add a Value to all the rest; I shall speak of such only as are Accessory or Additional, as these that follow.

FOUNTAINS, next to Plants, are the principal Ornaments of Gardens: 'Tis these that seem to animate them, by the murmuring and spouting of their Waters, and produce those admirable Beauties, that the Eye is scarce ever satisfied with beholding them. They are constantly set in the most advantageous Places, and where they may be best seen from all

all Parts. If there be any ſloping Ground in the Garden, you may there make Caſcades and Buffets of Water, continued by ſeveral Falls, accompanied with Spouts and Jet-d'eaux; and, where Water is plenty, Ponds and Canals may be made, which are moſt delightful Pieces in a Garden. Upon theſe Canals you may have ſmall gilt Gondolas and Pleaſure-Boats, and they ſhould be very well ſtock'd with Fiſh, for the Diverſion of Fiſhing in them. To add ſtill farther to the Ornament of the Water, Swans, Geeſe, and Ducks of different Kinds and Colours, are a very agreeable Sight. Fountains are uſually adorn'd with a Ruſtick Order of Architecture, enriched with Maritime Ornaments, and Figures, proper to the Water; as ſhall be more particularly ſpoken to at the End of the Second Part.

TERRASSES, when rightly ſituated, are likewiſe of great Ornament in Gardens, for their Regularity and Opening; eſpecially when they are well built, and beautified with handſome Stairs, and fine Aſcents. Sometimes there are made under them, Vaults, Grots, Caſcades, and Buffets of Water, with an Order of Architecture, and a great many Statues in Niches; and, on the Coping above, are ſet Vaſes and Flower-pots, orderly ranged and diſpoſed.

GREEN-HOUSES are large Piles of Building like Galleries, which, by their Fronts, add to the Beauty of Gardens; beſides that they are of abſolute Neceſſity to be built, for preſerving Orange-Trees, and other Plants, in Caſes, during the Winter. They ought to be placed ſo conveniently, that they may ſerve as a Gallery in the Summer, to walk in when it rains. They are ſometimes made under a vaulted Terraſs, where the Peers and Arches make a handſome Decoration enough at a Diſtance.

STATUES and Vaſes contribute very much to the Embelliſhment and Magnificence of a Garden, and extremely advance the natural Beauties of it. They are made of ſeveral Forms, and different Materials; the richeſt are thoſe of Caſt-Braſs, Lead gilt, and Marble; the ordinary Sort are of common Stone, or Stucco. Among Figures are diſtinguiſh'd Groups, which conſiſt at leaſt of two Figures together in the ſame Block; Figures Inſulate, or Detached, that is,

thoſe that you can go quite round; and Figures that are ſet in Niches, which are finiſh'd on the Fore-part only: There are, likewiſe, Buſts, Terms, Half-length Figures; Figures half as big as the Life, and thoſe bigger than the Life, called *Coloſſal*, placed either on regular Pedeſtals, or ſuch as are more ſlender, tapering, and hollowed, or on flat Plinths; not to mention the Figures of Animals, which ſometimes adorn Caſcades; as do alſo Baſs-Relievos, and Mask-heads.

THESE Figures repreſent all the ſeveral Deities, and illuſtrious Perſons of Antiquity, which ſhould be placed properly in Gardens, ſetting the River-Gods, as the *Naiades*, *Rivers*, and *Tritons*, in the Middle of Fountains and Baſons; and thoſe of the Woods, as *Sylvanes*, *Faunes*, and *Dryads*, in the Groves: Sacrifices, Bacchanals, and Childrens Sports, are likewiſe repreſented in Baſs-Relievo, upon the Vaſes and Pedeſtals, which may be adorn'd with Feſtoons, Foliage, Moldings, and other Ornaments.

THE uſual Places of Figures and Vaſes are along the Paliſades, in the Front, and upon the Sides of a Parterre; in the Niches and Sinkings of Horn-beam, or of Lattice-work made for that Purpoſe. In Groves, they are placed in the Center of a Star, or S. *Andrew*'s Croſs; in the Spaces between the Walks of a Gooſe-foot, in the Middle of Halls and Cabinets, among the Trees and Arches of a Green-Gallery, and at the Head of a Row of Trees, or Paliſades, that ſtand free and detached. They are alſo put at the lower End of Walks and Viſtas, to ſet them off the better; in Porticos, and Arbors of Trellis-work; in Baſons, Caſcades, *&c.* In general, they do well every where; and you can ſcarce have too many of them in a Garden: But, as in the Buſineſs of Sculpture, it ſhould be excellent, as well as in Painting and Poeſy (which are its two Siſters) I think it more adviſable for a private Gentleman to be content without Figures, than to take up with ſuch as are but indifferent, which do but create a continual Longing after this Perfection; the Expence of which is fit only for Princes, and great Miniſters.

THE Ends and Extremities of a Park are beautified with Pavilions of Maſonry, which the *French* call *Belvederes*, or Pavi-

Pavilions of *Aurora*, which are as pleasant to rest ones self in, after a long Walk, as they are to the Eye, for the handsome Prospect they yield; they serve also to retire into for Shelter when it rains. The Word *Belvedere* is *Italian*, and signifies a beauteous Prospect, which is properly given to these Pavilions; for that being always built upon some Eminence, they open and command the Country round about.

PERSPECTIVE Works and Grottos are now but little in use; especially Grottos, which are very subject to Ruin. They are commonly made at the End of Walks, and under Terrasses. As to Perspectives, they are of use to cover the Walls of Gable-ends, and such Walls as terminate Alleys that can be pierced no farther. They make a handsome Decoration enough, and their fallacious Openings are very surprizing. They are painted either in Oil, or in Fresco, and are secured above by a small Roof, which throws off the Rain-Water that would otherwise run along the Wall, and entirely spoil the Painting.

GRILLS of Iron are very necessary Ornaments in the Lines of Walks, to extend the View, and to shew the Country to Advantage. At present we frequently make Thorough-Views, call'd *Ah, Ah*, which are Openings in the Walls, without Grills, to the very Level of the Walks, with a large and deep Ditch at the Foot of them, lined on both Sides to sustain the Earth, and prevent the getting over, which surprizes the Eye upon coming near it, and makes one cry, *Ah! Ah!* from whence it take its Name. This Sort of Opening is, on some Occasions, to be preferred, for that it does not shut up the Prospect, as the Bars of a Grill do.

CASES and Flower-pots serve likewise for the Embellishment of Gardens. In Cases, are raised Orange-Trees, Jasmins, Pomgranate-Trees, Myrtles, Lawrels, *&c.* which are regularly placed upon the Parterres of Orangery, along the Terrasses, or on the Sides of Parterres; to form Walks between these, are put Pots and Vases of *Dutch* Ware, filled with Flowers of every Season, which are also set upon certain Forms made for that Purpose; or upon the Coping of the Walls of a Terrass, at a Descent of Steps; or else upon Plinths of Stone, in the Borders and Verges of Grass.

SEATS,

SEATS, or Benches, besides the Conveniency they constantly afford in great Gardens, where you can scarce ever have too many, there is such need of them in walking, look very well also in a Garden, when set in certain Places they are destin'd to, as in the Niches or Sinkings that face principal Walks and Vistas, and in the Halls and Galleries of Groves: They are made either of Marble, Free-stone, or Wood, which last are most common; and of these there are two Kinds, the Seats with Backs to them, which are the handsomest, and are usually removed in Winter; and the plain Benches, which are fixed to their Place in the Ground.

YOU should observe to lay one Colour in Oil, either green, or other, upon all that is exposed to the Wet in a Garden, and is subject to rot; as the Lattice-work, Seats, Cases, Forms, *&c.* and this not only to preserve them, but to make them look with the greater Neatness and Beauty.

End of the First Part.

PART II.

Which contains the

PRACTICE OF GARDENING.

CHAP. I.

A Preliminary of ſome Practices in Geometry, deſcrib'd upon Paper; with the Manner of marking them out to a Truth upon the Ground.

IT is not enough to have ſpoken, in the former Part, of all that is requiſite to compoſe a handſome Garden, and ſhewn you how to make a right Choice thereof, by the Examples given in thoſe Deſigns; it is farther neceſſary, that I now inſtruct you in the Practice, and the Manner of putting in Execution all thoſe noble Ideas, which, without the Help of this, would remain but ſo many obſcure Myſteries. Indeed, all that has been ſaid hitherto, being, to ſpeak properly, but

but the Theory of this Work, those Chapters would be of no Service, without these of the Second Part, which contain the Practice: *La Theoria niente senza la Pratica*, is the *Italian* Saying. 'Tis in this most Authors fail, who are apt to enlarge very amply upon the Speculative Part of a Science, and speak but very little or nothing at all of the Practick; which renders their Work of no great Use, and makes one regret the Time spent in reading them, when 'tis not possible to reap any Advantage thereby.

THE Method of tracing Things out upon the Ground, consists in a great deal of Practice, rather than in any Depth of Science: There needs no more than to know some few Rules of Practical Geometry, to capacitate a Man for this Work in little Time. Experience, Tryal upon the Ground, and a certain Rote, are more necessary to this End, than long Reflexion and Contemplation in the Closet; Nevertheless, if a Man neglect to inform himself of these Rules, and apply himself straitway to work upon the Ground, before he has designed upon Paper, or, at least, before he knows the Relation the Paper has to the Ground, he certainly runs the Hazard of being oftentimes mistaken. I am not saying that a Man must needs be an excellent Geometrician, to be capable of tracing out Designs upon the Ground; this is above the Reach of a Gardener; and, if it were necessary, a Garden would lie a long Time uncultivated, were it to wait its Masters rendering himself accomplish'd in a Science, for which the whole Life of Man is scarcely sufficient.

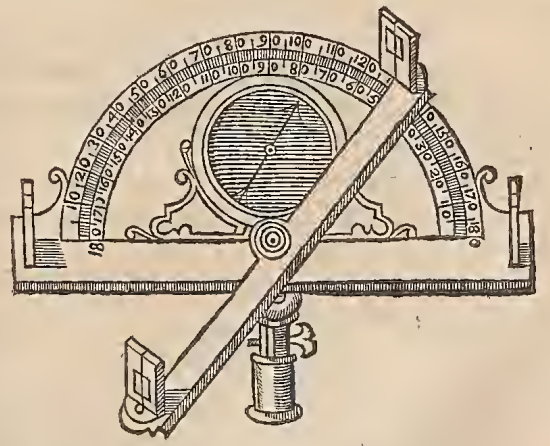
NOR would I impose upon a Gardener the Necessity of reading any Treatise of Practical Geometry, though there be those that are very good, and very short. I would spare him that Trouble: For which Reason I have carefully collected, from Practical Geometry, all that can any ways relate to Designs of Gardening, and from thence have composed these Preliminaries, or Elements of the Method of tracing, which I have reduced to the twenty following Exercises.

P. Pardies, S. Le Clerc.

THERE

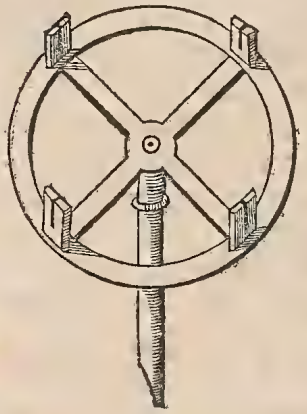
THERE are ſeveral Inſtruments made uſe of for tracing upon the Ground; but the moſt ordinary are the Graphometre, or Semi-circle, and the Square, or perfect Circle.

THE Semi-circle is uſually made of Braſs, and ſhould have from ſix to twelve or fifteen Inches Diameter: The larger it is, the better for Uſe. The Semi-circle is divided into 180 Degrees, which is half the complete Circle into 360; and 90 Degrees, which is the quarter of the Circle, ſerves to form a Right Angle, and raiſe a Square. There are two Rulers or Indexes, one immoveable, which ſerves as a Baſe; and the other moveable, which the *French* call the *Alhidade*, which turning about upon a Center-Pin in the Middle, ſerves to take the Openings of Angles. Theſe two Rulers are terminated by Sights ſtanding up at Right Angles, which direct and guide the Viſual Ray. The Middle of this Inſtrument is generally furniſhed with the Sea Compaſs, for laying down the Points thereof upon a Plan. The Semi-circle is mounted upon a Knee-Joint, or Ball, for the Conveniency of turning it every way, having a Screw to it, which makes the Joint go ſtiffer, or ſlacker, at Pleaſure. 'Tis ſet upon the Ground by means of three Legs or Staves tipt with Iron, which are put into as many Sockets below the Ball, and thruſt into the Ground, as Occaſion requires. See the Figure.



THE leſſer Sort of Semi-circles are fixed upon a Ball with no more than one Socket, and conſequently require but one Leg, which is placed exactly upon any Point aſſign'd in the Ground. But the greater Semi-circles that ſtand upon three Legs, as it would be difficult to ſet them preciſely over a given Point, have a Plummet which hangs down, and ſhews when the Center is juſt over the Place in Queſtion.

THE Square, or whole Circle, which is an Instrument much made use of in Gardening, and Surveying of Land, differs very much from the Squares of Masons, and other Artificers: This is a perfect Circle, cut into four equal Parts, by two immoveable Rulers fixed to the Circumference, which cross one another at Right Angles, as may be seen in the Figure. At the four Extremities of these Rulers, and sometimes in the Center, are Sights placed for raising a Square, and returning a Line at Right Angles. This Instrument is generally made of Iron only, but would be better of Brass. 'Tis mounted upon a single Socket without a Ball, into which is fix'd a Leg, when you make use of it upon the Ground. This is called a Plain Square, because it has no Division of Degrees upon the Circle, nor no Alhidade, or moveable Index: For which Reason there is no taking the Opening of an Angle with it; nor is it of any other Use upon the Ground, than to range strait such Lines as are to be continued to a great Length, and to form Right Angles upon any Occasion. This Defect makes the Semi-circle preferred to it, which is an Instrument much more complete, and which serves not only for the taking and drawing of Plans, but also for many other Operations in Geometry.



THESE Instruments are carried into the Country very conveniently in Cases, and the Legs and Ranging-sticks are tied up together in a Bundle.

UPON the Ground we make use likewise of the Fathom, the Line, or small Cord, and of Ranging-sticks and Stakes, all which are Things so requisite in Gardening, that one may say they are of daily Use, there being scarce a Day in a Year that a Gardener has not Occasion for one or other of them.

THE Fathom is a strait Rod of six Foot long, the Division of which is marked with small Nails; each Foot is divided into 12 Inches, the Inch into 12 Lines, and the Line into 12 Points,

12 Points, or Parts. The Fathom regulates the Length and Breadth of Walks, and serves for taking the larger Measures, as the Foot does for the lesser.

WE make use also of a small Chain of three or four Fathom long, with Spikes of Iron, which, for large Measures, is much more certain than the Fathom.

THE Line is nothing but a small Cord or Pack-thread wound about a Stick, which is run off according to the Length required: You may observe, that to keep it from stretching, it will be necessary to double it, and make Knots in it at every four Foot; we also make Loops at the Ends to put the Stakes through, when we draw a Circle, Oval, Half-Moon, *&c.*

We generally make this Line from 15 to 20 Fathom in Length.

AS the Line is subject to become longer or shorter, as it is more or less strained, to shrink much when it is wet, and to stretch upon drying, you may, instead of it, make use of small Iron-Wire, of Lines made of the Rinds of Lime-Tree, or of the Branches of Bend-with tied together, which are not subject to that Inconvenience.

WE call it Straining the Line, when, being fasten'd to two Stakes, you draw it as tight as you can, still observing, that the Line be neither slack nor confined; that is to say, that in lifting it up a little between your Fingers, it bear every where alike, without any Clod or Bank to raise, confine, or force it ever so little.

RANGING-STICKS and Stakes are plain Sticks, which should always be chosen as strait as possible, to facilitate the Work. They are made sharp at one End for driving them into the Earth, and the upper End is cut very smooth and eaven, which we call the Head of the Ranging-Stick.

THE Ranging-Sticks, or Perches, differ from the Stakes, or Spikes, in nothing but that they are bigger, and should be five or six Foot long, whereas two or three foot Length is enough for the Stakes.

THE Terms of staking out, alining, ranging, and bourning, all signify the same Thing; and are, when he that performs the Work, shutting one Eye, and opening the other, applies it to the Head of the Ranging-Stick, to direct all the others in

the ſame Line, which we call the Line of Aim, or Viſual Ray.

IT happens, that if the Eye be applied too near the Stick, a Defect in the ſtanding of the others can't be ſo well perceived, becauſe the Viſual Ray is always apt to deviate; 'tis better, therefore, to place yourſelf three or four Foot beyond the Ranging-Stick; and ſtooping to its Height, with one Eye ſhut, aim with that which is open, and direct all the other Stakes according to the Range of the firſt, with that in the Middle, and at the other End, ſo that they be all cover'd, and appear as one only, were there thirty of them ſtanding in the ſame Line.

'TIS no way neceſſary, that the Ranging-Sticks ſhould ſtand of equal Height in this Caſe; that is required only in Leveling; for if one Stick ſtand half a Foot higher than another in this Work, it matters not, ſo they range directly, and cover one another as they ought.

IN drawing upon the Ground, there is likewiſe need of an Inſtrument, called a *Tracing-Staff*, which is a long ſtrait Stick tipt with Iron at the lower End, having the Point triangular, or flatted like a Cat's Tongue; with this Tracing-Staff you ſtrike out and deſign all the Figures of a Garden; in a Word, 'tis the very Pencil-Caſe of him that traces Things upon the Ground.

IN tracing, you muſt ſtrain the Line from Stake to Stake, and follow it with the Tracing-Staff, ſo as not to force it one way or other: In great Lengths, it would be well to drive ſmall Spikes in the Track, at proper Diſtances, both for fear it ſhould be defaced, and alſo that it may be the better diſtinguiſh'd at a Diſtance.

WHEN you trace, the Earth ſhould be broke up a little before the Tracing-Staff, to make the Track ſhew larger and deeper: You paſs the Tracing-Point ſeveral times through the ſame Track, and ſometimes your Hand ſide-ways, to mark it the more diſtinctly, leſt the Wind and the Rain ſhould deface it.

YOU ought never to take up the Stakes till the Track be ſcored out very plain upon the Ground, and two, at leaſt, ſhould be conſtantly left in each Line, as well to be of uſe in

in planting the Trees, as for recovering new Measures, should it be afterwards necessary.

WHAT we call Raising a Square (which is a Term much used in this Work) is, when, upon a strait Line drawn with the Instrument, or with the Cord, you cause another Line to fall directly perpendicular, which makes a Right Angle, or Square; and is what the *French* Workmen call, *Le Trait quarré.*

YOU must take the Precaution in working, to have near you a small Line of three or four Fathom long, to take the lesser Measures, and perform the smaller Operations; as also, to have a large wooden * Square to make the short Returns you meet with in your Designs, where 'tis needless to make use of the Semi-circle, or Cord, to raise the Square.

* *This is the same Square that all Workmen make use of.*

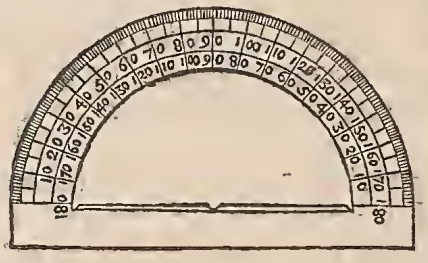
WHEN, in the following Exercises, you read, *Trace out this Line by the Third, by the Fifth Practice*, &c. it signifies, that 'tis the same Operation that was done before in the Third or Fifth Practice, to which you are referred, to avoid Repetitions; and the Practices are numbered exactly for this very Purpose.

'TIS convenient to say one thing here, before I enter upon the following Exercises; That a Gardener, who is desirous to learn, be not startled at the Difficulties he may conceive, either in the Business of Design, which he may think indispensably necessary for him to know how to perform, or at the great Pains he may suppose 'twill cost him, to apprehend, and put in Practice, all the following Figures.

AS to the first Difficulty, I shall say, for all Gardeners and Countrymen in general, that 'tis not necessary they should know how to design, but only that they should understand a Plan, so as that when a Design is given them, they may be able to strike it out to a Truth upon the Ground; which is done by means of a small double Line divided by the Fathom, which is called the Scale of the Plan, and is always at the Bottom of the Paper. As all the Parts of a Design are made upon this Scale, and that it is an infallible Rule for describing them truly upon the Ground, to follow it exactly, the Gardener has no more to do than to examine the Scale,

and

and consider into how many Fathom 'tis divided. For this Purpose, he must have a Pair of Compasses wherewith to measure all the Parts of the Plan, a Ruler to prolong the Lines and Centers, which must be found upon the Paper; and measuring these by the Division of his Scale, he will know how many Fathom they have in Length and Breadth. He will have need likewise of a small Instrument, called a Protractor, such as is represented in the following Figure, which is to take the Openings of Angles. The Protractor is applied to one of the Sides of the Angle, and reckoning from its Center, the Number of Degrees from the Base to the Place where the other Side of the Angle comes to cut the Circumference, you mark it down upon the Paper, and describe it truly upon the Ground in like Proportion, by opening the Semi-circle, and setting the Alhidade or Moveable Index on the same Number of Degrees; because the Protractor is divided into as many Degrees, as the great Semi-circle made use of for Drawing upon the Ground.



As for the second Difficulty, which is the great Pains a Gardener may prepossess himself he must be at, to apprehend the following Exercises, I shall answer, that if he will but read them over without Prejudice, and bestow a little Application on them, let his Understanding be never so mean, he will find nothing difficult, and out of the Reach of an ordinary Capacity; having endeavour'd to reduce them all to as small a Number as possible, and to range them in an easy and natural Order; besides which, I have avoided a tedious Compass of Words and Terms affected in Geometry, which possibly might seem barbarous to him: In a word, it has been my whole Application to render myself intelligible to Gardeners, and to make that easy and plain to them, which in itself might possibly appear difficult. I write not then for Geometricians, nor for Persons knowing in this Matter, to whom the most difficult Terms and Things

Things are become familiar by Study; but only for Countrymen, and some that are curious in Gardening: And this I mention, that it may not be charged upon me hereafter, that I have declined to speak like a Tradesman.

AFTER this short Advertisement, we may proceed to the following Exercises, which are supposed to be designed upon Rolls of Paper, call'd Plans, and the Space upon the Side is the Ground, upon which they are conceiv'd to be laid down in a true and just Proportion; that is to say, converted from little to great. All these Exercises are contain'd in the four Plates at the End of this Chapter.

BY this Comparison of the Paper with the Ground, you will judge of the Relation they have one to another; and I may truly affirm, that these Practices contain all that a Gardener needs to know in Geometry, for enabling him to trace out all Sorts of Figures upon the Ground.

A Comparison of the Paper with the Ground, in what relates to the Manner of Tracing, reduced to Twenty Practices.

THE FIRST PRACTICE.

To draw a Right or strait Line upon the Ground, with the Cord.

LET the strait Line be *ab*, which is here supposed to be twelve Fathom; measure exactly this Length upon the Ground from *A* to *B*, and fix two Stakes there; then straining the Cord from one to the other, mark the Line out upon the Ground with the Tracing-Staff, following the Cord, so as not to force it one way or other. FIGURE I. PLATE I.

OBSERVATION.

THIS Practice is proper only for a Distance of about 12 or 15 Fathom, by reason of the Difficulty you will have to trace a longer Line, by the Side of the Cord, without making it swerve.

THE

THE SECOND PRACTICE.

To draw a Right Line upon the Ground, by the help of Stakes.

SUPPOSE the Line to be drawn be found upon the Plan to be a hundred Fathom long, as the Line *c d*, drive a Stake into the Ground upon one of the Extremities of this Line, as
FIG. II. at *A*, and another at the Extremity *B*, diſtant a hundred Fathom one from another; and, in a Line with theſe two, ſet another about the Middle, as at *C*; thus divide the whole Length *AB*, into ſo many Parts, that none may exceed 12 or 15 Fathom; and ſtraining a Cord from Stake to Stake, trace the Line at ſeveral Times, according to the foregoing Practice. You may afterwards take away the longer Stakes or Perches that ſerved for ranging, and fix ſhort Stakes or Spikes, pretty near one another, for finding the Track again more eaſily, if it ſhould be defaced.

THE THIRD PRACTICE.

To prolong a Right Line upon the Ground.

IN this Practice, the Line to be prolonged is ſuppoſed to be the Range of a Wall, or of a Building, as *ab*. Place yourſelf at the Extremity, oppoſite to that which ſhould be
FIG. III. prolonged, as at *A*, and cauſe a Stake to be fixed beyond the Corner *B*, as at *C*, in ſuch manner that this Stake ſwerve not from the direct Line *AB*, towards *D*, or towards *E*, and then trace out the Line *BC*, by one of the preceding Practices, according to the Length of it.

THE FOURTH PRACTICE.

To deſcribe, with the Cord, a Right Line, which ſhall be ſquare or perpendicular to another Right Line already traced.

LET the Right Line traced upon the Ground be *CD*, and the Stake *E* planted at the Point, from whence the Perpendicular ſhould be raiſed: Carry on each Side the Point *E*,
FIG. IV. about ſix or eight Fathom, and ſet two Stakes there, as *F* and *G*, then

then fixing the Loops at the Ends of the Cord upon the two Stakes *F* and *G*, draw the Loop in the Middle of it towards *H*, so that the two Sides of the Cord *FH*, and *GH*, may be strained alike. Drive a Stake at *H*, just before the Loop, that is to say, in the Angle made by these two Lines, and straining another Cord from *E* to *H*, trace out the Line *HE*, which shall be perpendicular to the Line *CD*, and like to that of the Plan *ab*.

THE FIRST OBSERVATION.

FOR performing this and the following Practices, you may take a Cord of 15 or 20 Fathom long, and make a Loop at each End of it; then double it, and straining it equally from the two Ends, make a third Loop in the Middle.

THE SECOND OBSERVATION.

THIS Practice may be performed likewise, by tracing two Portions of a Circle from the Stakes *F* and *G*, which are equally distant from the Point *E*, by means of a small Tracing-Pin fixed at the End of the Cord, which will form two Sections in *H*; and in the Place where they cut one another, call'd the Point of Intersection, plant the Stake *H*, from whence, to that of *E*, draw the perpendicular Line *HE*. This Practice may also serve for all that follow.

THE FIFTH PRACTICE.

To describe with the Instrument, a Line perpendicular to a Right Line given.

LET the given Line traced out upon the Ground be *AB*, and let the Stake *C* be planted at the Point from whence the Perpendicular is to be raised, as is marked in the Plan by *ab*; fix the Semi-circle upon its Foot plum over the Stake *C*, and direct its Base towards the Stake *A*, or towards *B*, by means of the Sights that are upon the Base; and turning yourself square, set the Moveable Index to 90 Degrees, and, by the FIG. V.

Sights upon the Index, direct a Stake to be drove towards *D*, at a Distance proportionable to the Length the perpendicular ought to have: You then trace this Line from the Stake *D* to *C*, by the first or second Practice, which Line shall be perpendicular or square to the given Line *A B*.

THE SIXTH PRACTICE.

To describe, with the Cord, a Perpendicular Line at the End of a Right Line given, already traced.

HAVING upon the Paper the Line *ab*, perpendicular to the Line *bc*, which must be described upon the Ground: To do this, from the Extremity *A* of the traced Line *A B*, FIG. VI. measure (suppose) 10 Fathom, and drive a Stake, as at *C*; then take a double Line of 10 or 12 Fathom, and fixing the two End Loops upon the Stakes *A* and *C*, draw the Middle Loop towards *E*, and plant a Stake there; and taking the Loop off from the Stake *A*, put another Stake through it; and straining the End of the Cord, so that it range in a Line with the Stakes *E* and *C*, as at the Point *G*, fix this Stake there, and strain another Line from the Stake *A* to the Stake *G*; the Line *G A* shall be perpendicular to the Line *A B*.

OBSERVATION.

YOU may raise this Perpendicular at the End of a Line, by the help of the Semi-circle, setting it plum over the Stake at one of the Extremities, and directing the Base towards the other Extremity, you then place the Alhidade or Index over 90 Degrees, and work as in the fifth Practice.

THE SEVENTH PRACTICE.

To draw, with the Cord, a Line parallel to a Right Line traced out.

FIG. VII. LET the two parallel Lines upon the Plan be *ab* and *cd*, distant from one another 12 Fathom, and let the Right Line PLATE II. *C D* be traced upon the Ground. At each of its Extremities *C* and

C and *D*, raiſe a Perpendicular, according to the foregoing Practice; ſet upon each of them the Length of 12 Fathom, as here, from *C* to *E*, and from *D* to *F*, and then draw, from the Point *E* to *F*, the Line *E F*, which ſhall be parallel to the ſame *CD*.

THE EIGHTH PRACTICE.

To draw, with the Semi-circle, a Line parallel to a Right Line traced out.

LET the two parallel Lines upon the Plan (as in the foregoing Practice) be *ab*, and *cd*, which ſuppoſe diſtant from one another 50 Fathom, and that the Line *AB* were traced upon the Ground, to which a Parallel ſhould be drawn at the like Diſtance. From the Point *C*, taken at Pleaſure upon the Line *AB*, raiſe with the Inſtrument a large Perpendicular, by the 5th Practice; then moving the Inſtrument to the Point *D*, 50 Fathom diſtant from the Point *C*, direct the Baſe towards the Stake *C*, and the Moveable Index being upon 90 Degrees, direct, by the Sights, a Stake towards *E*, and another towards *F*, and trace the Line *E F* by the firſt or ſecond Practice, according to the Length it contains upon the Plan. FIG. VIII.

OBSERVATION.

WHEN there are ſeveral Lines to be drawn parallel to one given, there needs no more than to ſet off the Diſtances from one to the other, either after the ſeventh Practice, by raiſing Perpendiculars at the Ends, or according to this laſt, by returning the Square with the Semi-circle, at each of the Points meaſur'd off upon the great Perpendicular in the Middle.

THE NINTH PRACTICE.

To deſcribe, with the Line, an Angle equal to an Angle given upon the Paper.

TAKE upon the Plan a Length at Pleaſure, as here, of eight Fathom. With this Interval, upon the Point of the

FIG. IX. Angle *a*, describe with the Compasses an Arch, as *b c*, which joins the two Sides of this Angle, and measure the Distance of the two Points *b* and *c*, supposed four Fathom, which is call'd the Cord of the Arch *b* and *c*. Then measure upon the Line traced upon the Ground, eight Fathom; as from *A* to *B*, and taking a Line of four Fathom, the Loop of which is fixed to the Stake *A*, and another of eight Fathom fix'd in like manner to the Stake *B*, join them together at the Point *C*, where drive a Stake; after which you draw the Lines *CB* and *CA*, which, with the traced Line *AB*, make the Angle *BAC* equal to the Angle of the Plan.

THE TENTH PRACTICE.

To draw, with the Instrument, an Angle equal to an Angle given upon the Plan.

FIG. X. MEASURE the Angle marked upon the Plan with the Protractor, by placing its Corner upon the Point *a*, and its Base along the Line *ab*, count how many Degrees there are from *c* to *d*; as suppose thirty, keep this Number carefully in mind, that it be set off exactly upon the Ground, in supposing *AB* the traced Line, and the Point *B* that from which is to be drawn an Angle equal to that of the Plan. Set the Center of the Semi-circle as perpendicularly as possible over the Point *B*, and directing the Base to the Stake *A*, place the Index at the Point *C*, upon the same Degree that you found upon your Paper with the Protractor, and by the Sights of the Index cause a Stake to be planted towards *D*, and draw the Line *BD*, by either of the two first Practices, as best suits with the Distance contained between *B* and *D*.

THE ELEVENTH PRACTICE.

To draw, with the Line, a Triangle equal to a Triangle given upon the Plan.

FIG. XI. LET the supposed Triangle be *abc*; measure each of its Sides, and note them upon the Plan, then drawing the Base *AB*, found, for Instance, to be ten Fathom; take a Line of

of 12 Fathom long, and fix it by a Loop to the Stake *A*; and one of 9 Fathom, which fix in like manner to the Stake *B*, and joining their Extremities, as in *C*, drive a Stake there; then draw the two Lines *AC* and *BC*, and the Triangle *ACB* shall be like that of the Plan.

THE FIRST OBSERVATION.

IF the Triangle had the three Sides equal, which we call Equilateral, you need only take two Lines of equal Length with the Base, at the Extremities of which, having two Stakes run through the Loops, and joining the Ends of these Lines together above, you plant a Stake, where they intersect, and trace the two Lines, as before.

THE SECOND OBSERVATION.

IF the Triangle should be so large that it could not be conveniently drawn with the Line, you must then measure one of its Angles, as that of *a*, with the Protractor, which suppose 50 Degrees, and the Side *ab* 100 Fathom, and *ac* 120 Fathom. After having drawn upon the Ground the Line *AB* 100 Fathom, by the second Practice, place the Semi-circle on the Point *A*, directing its Base to the Point *B*, and setting the Index to 50 Degrees, you direct the Stake *C* to 120 Fathom distant from the Stake *A*; after which, from the Stake *C* to that of *B*, you draw the Line *CB*, which, with the Lines *BC* and *AB*, form the Triangle demanded. FIG. XI.

THE TWELFTH PRACTICE.

To draw an oblong Square, or Parallelogram.

AFTER having measured the Length *ab*, and the Breadth *bc* of the Parallelogram described upon the Paper, and quoted them, as suppose 8 and 15 Fathom, trace out the Line *AB* of 15 Fathom; and upon one of its Extremities, as *A*, raise a Perpendicular of 8 Fathom long, as from *A* to *C*, by the sixth Practice. Then fix a Line of 15 Fathom long to the Stake *C*, and one of 8 Fathom to the Stake *B*; and where FIG. XII. PLATE III.

their

their Extremities meet, as in *D*, drive a Stake, and trace the Lines *B D* and *C D*, which, with *A B* and *A C*, will form the Parallelogram *A B C D*.

THE FIRST OBSERVATION.

IF the oblong Square were much bigger than this, you must then raise, with the Instrument, two Perpendiculars upon the Extremities of the Line *A B*, according to the Observation on the sixth Practice, and make each of those Perpendiculars equal to the Breadth of the Parallelogram.

THE SECOND OBSERVATION.

TO draw a perfect Square, the Practice is the same with that above, saving that the two Perpendiculars must be drawn as long as the Base of the Square.

THE THIRTEENTH PRACTICE.

To describe, with the Line, an Irregular Figure of four Sides.

SUPPOSE the Irregular Figure to be *a b c d*, from the Point *a*, with the Interval *a c*, describe with the Compasses an Arch, as *c e*; and from the Point *b*, with the Interval *b d*, make another Arch, as *d f*; measure the Lengths *a b*, which suppose 25 Fathom, *a c* 9 Fathom, *b d* 11 Fathom, and the Cords of the Arches or Distances from *c* to *e* 10 Fathom, and from *f* to *d* 14 Fathom. Then trace upon the Ground the Line
FIG. XIII. or Base *A B* of 25 Fathom long, and carry from *A* to *E* 9 Fathom, and from *B* to *F* 11 Fathom; plant two Stakes in the Points *E* and *F*, and taking a Cord of nine Fathom fix'd to the Stake *A*, and one of 10 Fathom long fix'd to the Stake *E*, bring their Ends to meet in the Point *C*, and drive a Stake there: Do the like on the other Side, as upon the Stake *B* fix a Cord of 11 Fathom, and one of 14 upon the Stake *F*, bringing their Extremities together in the Point *D*, and tracing the Lines *A C*, *C D*, *D B*, you form, with the Base *A B*, the four-sided Figure proposed.

THE

THE FOURTEENTH PRACTICE.

To draw an irregular Figure of four Sides with the Instrument.

The four-sided Figure *abcd*, is here supposed to be considerably bigger than the foregoing; as the Base *ab* to be 100 Fathom long, the Side *ac* 20 Fathom, and that of *bd* 30 Fathom. Measure, with the Protractor, the Openings of the two Angles that fall upon the Base *ab*; suppose here the Angle *a* to be 60 Degrees, and that of *b* 100, quote all these Measures exactly upon the Plan, and trace out upon the Ground the Base Line *AB* 100 Fathom long, by the second Practice; then place the Semi-circle upon the Stake *A*, and make an Angle of 60 Degrees, that is to say, equal to the Angle *bac* upon the Paper, by the tenth Practice; make the Side *ac* 20 Fathom, according to the Plan, and drive a Stake at *C*: Likewise from the Stake *B* make an Angle of 100 Degrees, and set off 30 Fathom on the Side *BD*, plant a Stake at *D*, and trace the Line *DC* from *D* to *C*, which, with the Lines *CA* and *DB*, and the Base *AB*, form an irregular four-sided Figure, like that of the Plan. FIG. XIV.

OBSERVATION.

EVERY Figure of many Sides, whether Regular or Irregular, is called a Polygone. Regular Polygones take their Names from the Number of their Sides, from the Square to the Figure of 12 Sides.

The Polygone of	5	Sides is called	A Pentagone.
that of	6	. . . . .	An Hexagone.
of	7	. . . . .	An Heptagone.
of	8	. . . . .	An Octogone.
of	9	. . . . .	An Enneagone.
of	10	. . . . .	A Decagone.
of	11	. . . . .	An Endecagone.
and of	12	. . . . .	A Dodecagone.

THE

THE FIFTEENTH PRACTICE.

To describe, with the Line, any Polygone whatsoever.

SUPPOSE the Regular Polygone (*a*) to be of five Sides, called a Pentagone; draw from the upper Angle (*a*) two Lines to the Extremities of its Base *b* and *c*, which will form the Triangle *abc*. Measure one of these two Lines only, and quote it upon the Plan, the other being equal to it. Then trace upon the Ground the Triangle *CDE*, like that of *abc* upon the Paper, by the eleventh Practice; which done, take two Cords equal to the Base *DE*, and putting their Loops over the Stakes *C* and *D*, bring their Extremities together in the Point *G*. Again shift the Cords to the Stakes *C* and *E*, and do the same in the Point *F*, and plant Stakes at *F* and *G*. Then trace the Lines *DG*, *GC*, *CF*, and *FE*, which, with the Base *DE*, form a Regular Pentagone, like that of *a* in the Plan.

FIG. XV.

OBSERVATION.

FOR tracing any other Polygone whatsoever, you must reduce it into Triangles, as in the foregoing Figure, and transfer each of those Triangles one after another upon the Ground, in the same Order as they lie upon the Paper; which is to be understood as well of Irregular Polygones, as Regular; the only Difference being, that in Regular Polygones the Triangles are equal, and in Irregular ones they are all unequal.

THE SIXTEENTH PRACTICE.

To describe any Polygone whatsoever, with the Instrument.

OBSERVATION.

THIS may be performed two different ways; for it may happen, either that the Base of the Polygone may be determin'd upon the Ground, or that a fix'd Point be given where its Center must necessarily be.

THE

THE FIRST WAY OF WORKING.

SUPPOSE the Line *BC* be drawn equal to one of the Sides of the Octogone *a*, which admit to be 15 Fathom and 4 Foot, measure upon the Paper, with the Protractor, one of the Angles made by the Meeting of two Sides of the Octogone, as *c* and *i*, which is what is called the Angle of the Polygone; set your Semi-circle upon the Ground over the Point *B*, and make an Angle equal to that of the Octogone, which is 135 Degrees, according to the following Table; make the Side *BI* 15 Fathom and 4 Foot, which is the Length of the Base *bc* in the Plan; and do the same Work from the Points *DEFGH*, in all which fix Stakes, and trace the Sides of the Polygone from one Stake to another, which will make it regular, and like that of *a* upon the Paper. FIG. XVI.

THE SECOND WAY.

IF the Center of the Octogone only be determin'd upon the Ground, as the Stake *A*, you must draw, upon the Plan, Lines from the Center *a* to all the Angles of the Polygone; take the Length of one of these Lines, called the *Radius*, as *ai*, the others being equal to it, and all supposed to be 20 Fathom; then measure upon the Plan, with the Protractor, the Angle made by the Meeting of two of these Lines or Radius's at the Center *a*, as *ab* and *ac*, which, according to the Table, is 45 Degrees, and is call'd the Angle at the Center. Set the Semi-circle upon the Ground over the Center-Stake *A*, and mark out, one after another, eight Angles of 45 Degrees, and upon each Line or Radius of these Angles, measure from the Stake *A* 20 Fathom, and drive Stakes there. Then draw the Lines from Stake to Stake, and they form a regular Octogone, like that of the Plan. FIG. XVI.

FIRST OBSERVATION.

TO make this ſixteenth Practice common to all regular Polygones, even from the Triangle and Square, to the Figure of twelve Sides, or the Dodecagone, you may have Recourſe to the following Table, where are contain'd the Angles of the Polygone, and thoſe of the Center; and 'tis ſufficient for the Work, to meaſure either one of the Sides of the Polygone, or the Line drawn from its Center to one of its Angles.

Names of the Polygones.	*Number of Degrees of the Angle of the Polygone.*	*Number of Degrees of the Angle of the Center.*
Triangle	60	120
Square	90	90
Pentagone	108	72
Hexagone	120	60
Heptagone	$128\frac{4}{7}$	$51\frac{3}{7}$
Octogone	135	45
Enneagone	140	40
Decagone	144	36
Endecagone	$147\frac{1}{2}$	$32\frac{1}{2}$
Dodecagone	150	30

SECOND OBSERVATION.

WITH reſpect to irregular Polygones, you may make uſe of the Methods taught in this Exerciſe, either dividing them into Triangles, from a Point or Center taken in them at Pleaſure, meaſuring, with the Protractor, all the Angles, and, by the Scale, all the Radius's drawn to the Angles of the Polygone, ſetting off upon the Ground the ſame Openings of the Angles, and the Lengths found upon the Plan; or elſe, meaſuring each Angle of the Polygone with the Protractor, and afterwards its Sides, as was juſt now mention'd above.

THE

THE SEVENTEENTH PRACTICE.

To draw a Circle upon the Ground.

SUPPOSE the Stake *A* to be the Center of the Circle *A* which you would deſcribe, meaſure, upon the Plan, the Diſtance from the Center *a* to the Circumference, as from *a* to *b*, ſuppoſe ſix Fathom; which is the Semi-diameter; put the Loop of a Line of ſix Fathom long over the Stake *A*, and the Point of a Tracing-Pin through a Loop made at the other Extremity *B*. Carry the Line and Tracing-Point quite round about the Center *A*, till you come to the Place where you firſt began, as *B*, which traces your Circle entirely, obſerving that the Line be always ſtrained alike, that nothing interrupts it, and that the Tracing-Pin be conſtantly held in the ſame Diſpoſition, without varying its Point; beſides which, let the Stake in the Center *A* be held by ſome-body to keep it perpendicular, leſt in ſtraining the Line too much it give way, and make the Circle bigger than that of the Plan. FIG. XVII. PLATE IV.

OBSERVATION.

IT is eaſy to apprehend, that the Application of this Exercise may ſerve for tracing Half or Quarter-Circles, and, generally, any circular Segment whatſoever.

THE EIGHTEENTH PRACTICE.

To draw an Oval upon the Ground.

LET the Oval upon the Paper be *a*, whoſe longeſt Diameter only is determin'd 12 Fathom; trace out upon the Ground the Line *AB* of 12 Fathom long, and divide it into three equal Parts, where plant Stakes, as in the Points *C* and *D*. Then take a Cord of the Length *DB*, or *CA*, with which trace lightly two Circles, from the Center-Stakes *C* and *D*, which Circles interſect one another in the Point *E* and *F*; in theſe drive two Stakes, and the Points *CDEF* ſhall be the four Centers of the Oval. Fix a Line upon the FIG. XVIII.

Stake *F*, and making it just touch or graze upon that of *D*, range it by the Stakes *F* and *D*, till it cut the Circumference of one of the two Circles, in a Point where you drive a Stake, as at *G*; do the same on the other Side, for planting the Stake *H* upon the Circumference; and from the Center *F*, without shifting the Line, draw the Arch *G H*, till you come to the Stakes *G* and *H*. This done, shift the Line, and putting it upon the Stake *E*, do the same thing for planting the Stakes *L* and *I*, and trace the Arch *I L*; then joining these Tracks with the two Portions of Circles at the Extremities *A* and *B*, you deface the rest of these Circles marked with Points, that you find within the Oval, which is all that will remain visible, and will in every respect be like that of *a* in the Plan.

THE NINETEENTH PRACTICE.

To trace an Oval, the two Diameters of which are determin'd upon the Paper.

LET the Oval be *a b c d*, the longest Diameter of which is 20 Fathom, and the shortest 12, as quoted upon the Paper. Trace upon the Ground the Line *A B* 20 Fathom long, which terminate by two Stakes, and divide it into two equal Parts, as in the Point *E*, upon which raise a Perpendicular of 12 Fathom long, by the fourth Practice; take the Half of this, which is six Fathom, and measuring a Cord of that Length, lay it upon the great Diameter *A B*, from one of its Extremities, as from the Point *B* towards *F*, divide the Space that remains between *F*, and the Center *E*, into three
FIG. XIX. equal Parts, and set off one of these Parts upon the same Line beyond the Point *F*, as *G*: Then take the Distance from the Point *G* to the Center *E*, and set it off upon the other opposite Side, as from *E* to *H*, planting two Stakes there, to range with those of the two Ends *A* and *B*; and from these Stakes *G* and *H*, draw the two equilateral Triangles *H I G*, and *H L G*, according to the first Observation of the eleventh Practice: This done, prolong the Sides of the Triangles indefinitely, and trace them lightly, as *I H N*, and

and *IGM*, &c. and from these four Points *GHIL*, as Centers, you trace the Oval in this Manner; putting the Loop of the Cord over the Stake *G*, extend it to the Extremity *B*, and draw the Part of the Circle to the Indefinite Lines *M* and *P*, where you are to stop. Then shift the Cord of the same Length on the opposite Side, and fix the Loop upon *H*, from whence draw the other circular Segment, with the same Caution, to stop the Track when you come to the Indefinite Lines *N* and *O*, and drive small Spikes in the Intersections of these Lines, as at the four Points *MPNO*. Then take a longer Cord, and putting the Loop over the Stake *I*, adjust its Length to the Point *D*, and trace the Arch *NDM*, till you come to the Track and Spikes of the circular Segments, with which the Tracing-Point ought to fall in exactly. Finish the Circumference of the Oval, by shifting the Loop of the Cord to the other Side upon the Stake *L*, from which you describe, in like manner, the Arch *OCP*. These two Arches joining with the circular Segments, entirely close the Oval; after which, you deface the Lines that served only to the Construction of it, that nothing remain but the bare Track of the Oval, which will be found proportionable, and like that of the Plan.

THE TWENTIETH AND LAST PRACTICE.

To draw, upon the Ground, the Oval, commonly call'd the Gardeners Oval.

IF you would draw an Oval at Pleasure, without any Plan, or that you have one upon Paper, such as the Oval (*a*), whose Diameters are not determined by Numbers; trace upon the Ground the Line *AB*, which you are to terminate with Stakes, and take thereon a Length at Pleasure, about a third, as from *A* to *C*. Set off the same Length from the Extremity *B* to *D*, and drive two strong Stakes in the Points *C* and *D*, which are the two Centers of the Oval. Then take a Line without Loops, bring it about the Stake *D*, and extend it double to the Extremity *H*, where you join the two Ends by a Loop, through which you thrust a FIG. XX.

Tracing-

Tracing-Point. Lead about this Point from *A* to *E*, from *E* to *F*, from *F* to *G*, &c. taking Care that the Line be always equally ſtrained, and that it ſlide and turn freely about the two Stakes *C* and *D*. Continue thus to carry the Line and Tracing-Pin till you come round again to the Stake *A* from whence you ſet out; and by the different Triangles which the Line forms ſucceſſively, in lengthening and ſhortening itſelf, it deſcribes the Oval without being ſhifted, according to the moſt uſual Method of Gardeners, which has given it the Name of the Gardeners Oval.

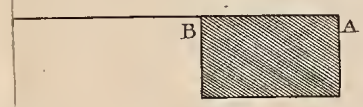
CHAP.

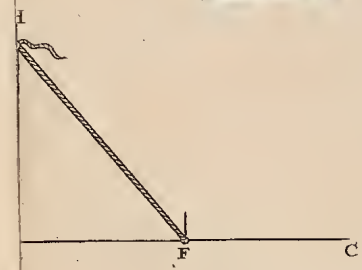
Ground.

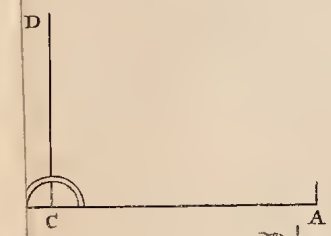
ce of First.

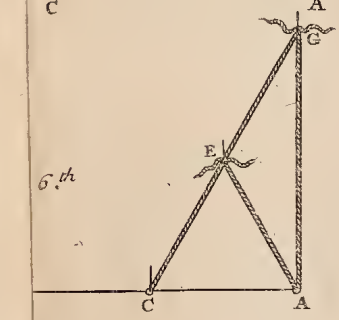
a. 2d.

a. 3d.









6th

The Paper.

Figure of First.

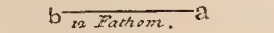


Fig. 2d.

Fig. 3d.

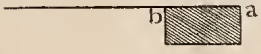


Fig. 4th.

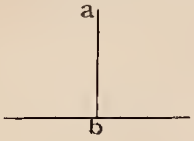


Fig. 5th.

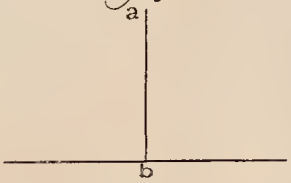
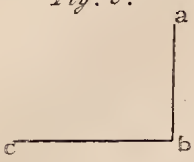
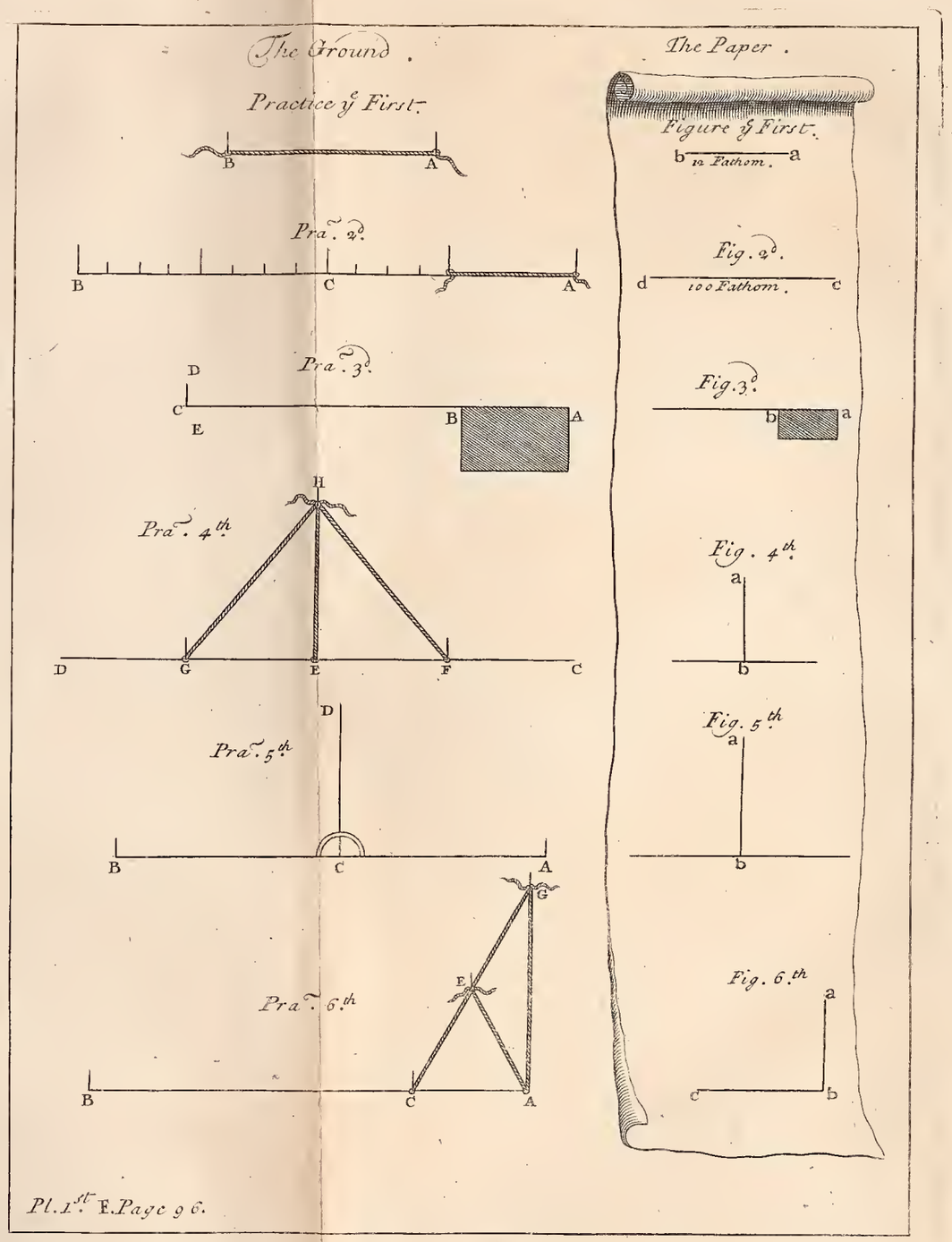


Fig. 6th

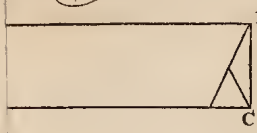




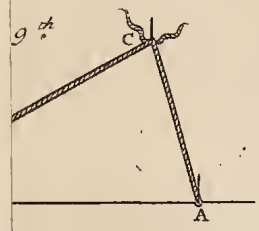
Pl. 1st. E. Page 96.

e Ground

ractice 8 7th.



9th.



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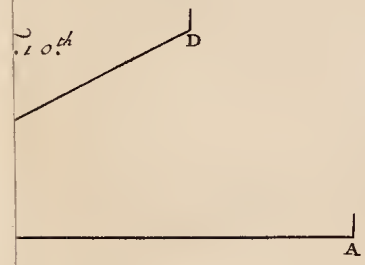
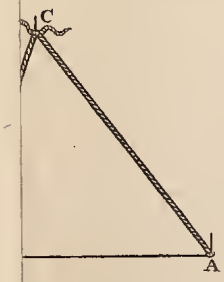




The Paper

Figure 7th

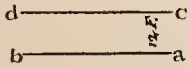


Fig. 8th

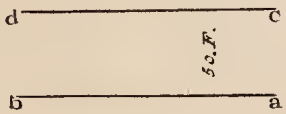


Fig. 9th

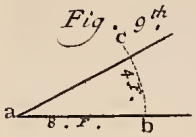


Fig. 10th

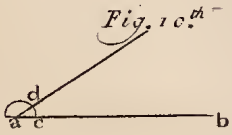
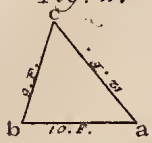
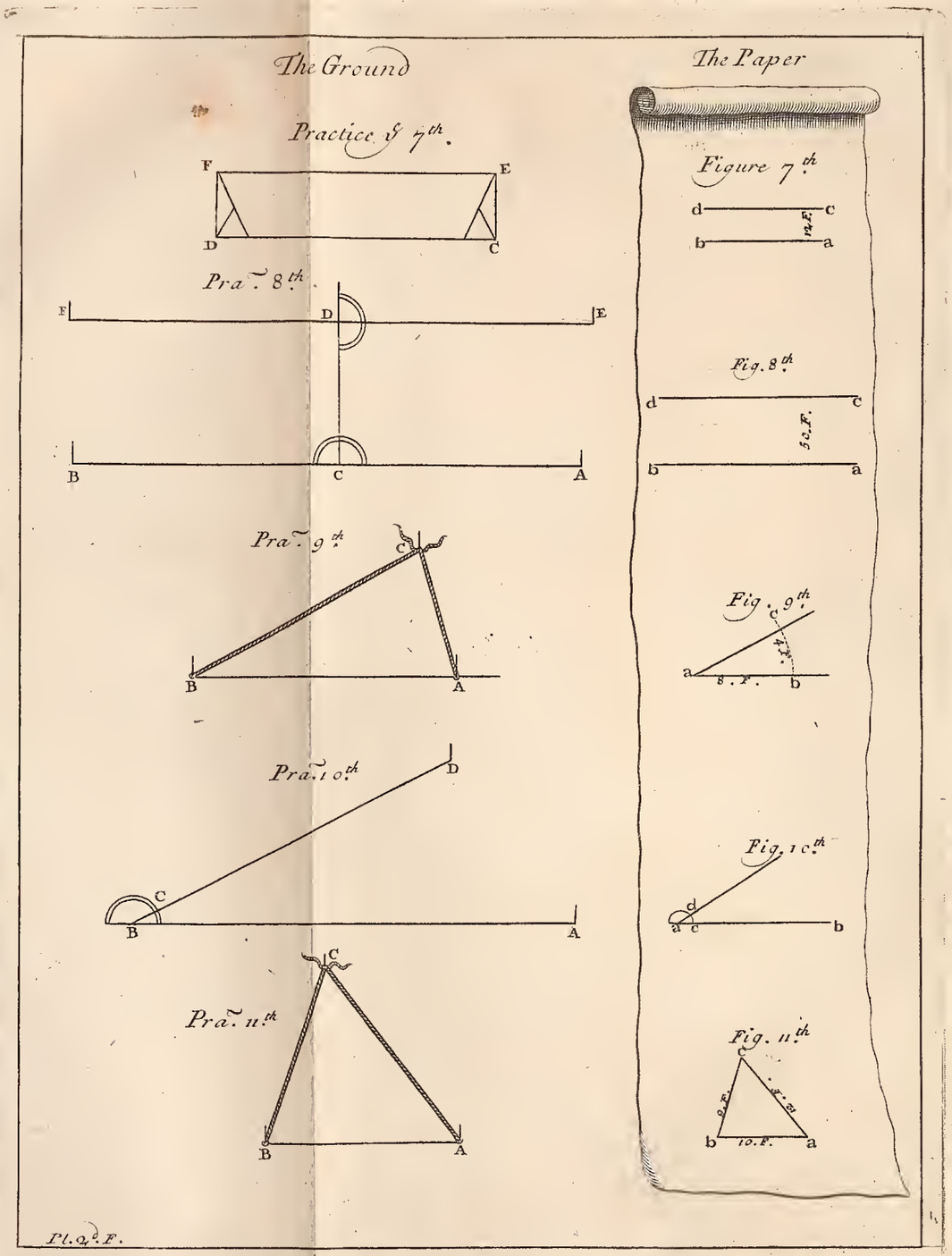


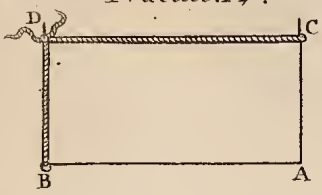
Fig. 11th




The Ground
The Paper
Practice 7th.
F
E
D
C
Figure 7th
d
c
b
a
14.F.
Pra. 8th.
F
D
E
B
C
A
Fig. 8th
d
c
5.c.F.
b
a
Pra. 9th
C
B
A
Fig. 9th
c
a
8.F.
b
Pra. 10th
D
C
B
A
Fig. 10th
d
a
c
b
Pra. 11th
C
B
A
Fig. 11th
c
9.F.
b
10.F.
a
Pl. 2d. F.

The Ground.

Practice. 12th.



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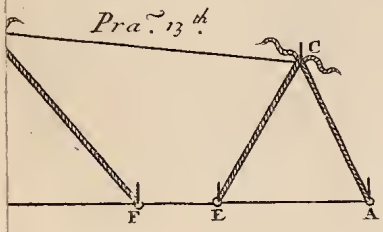

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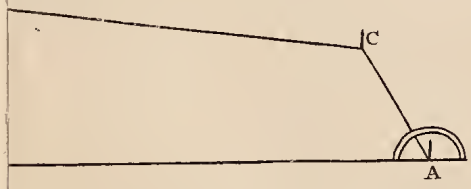
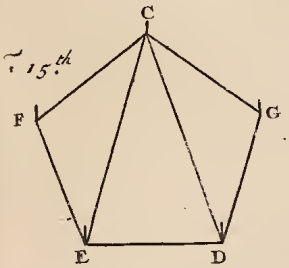
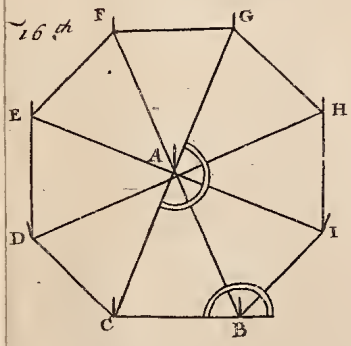


a. 15th.



16th.



The Paper.

Figure 12th.

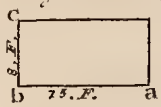


Fig. 13th.

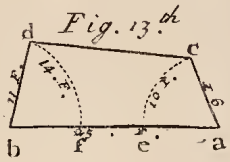
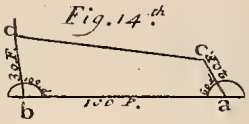


Fig. 14th.



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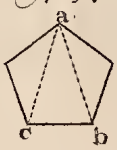

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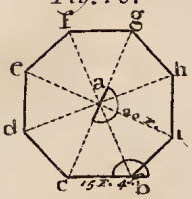
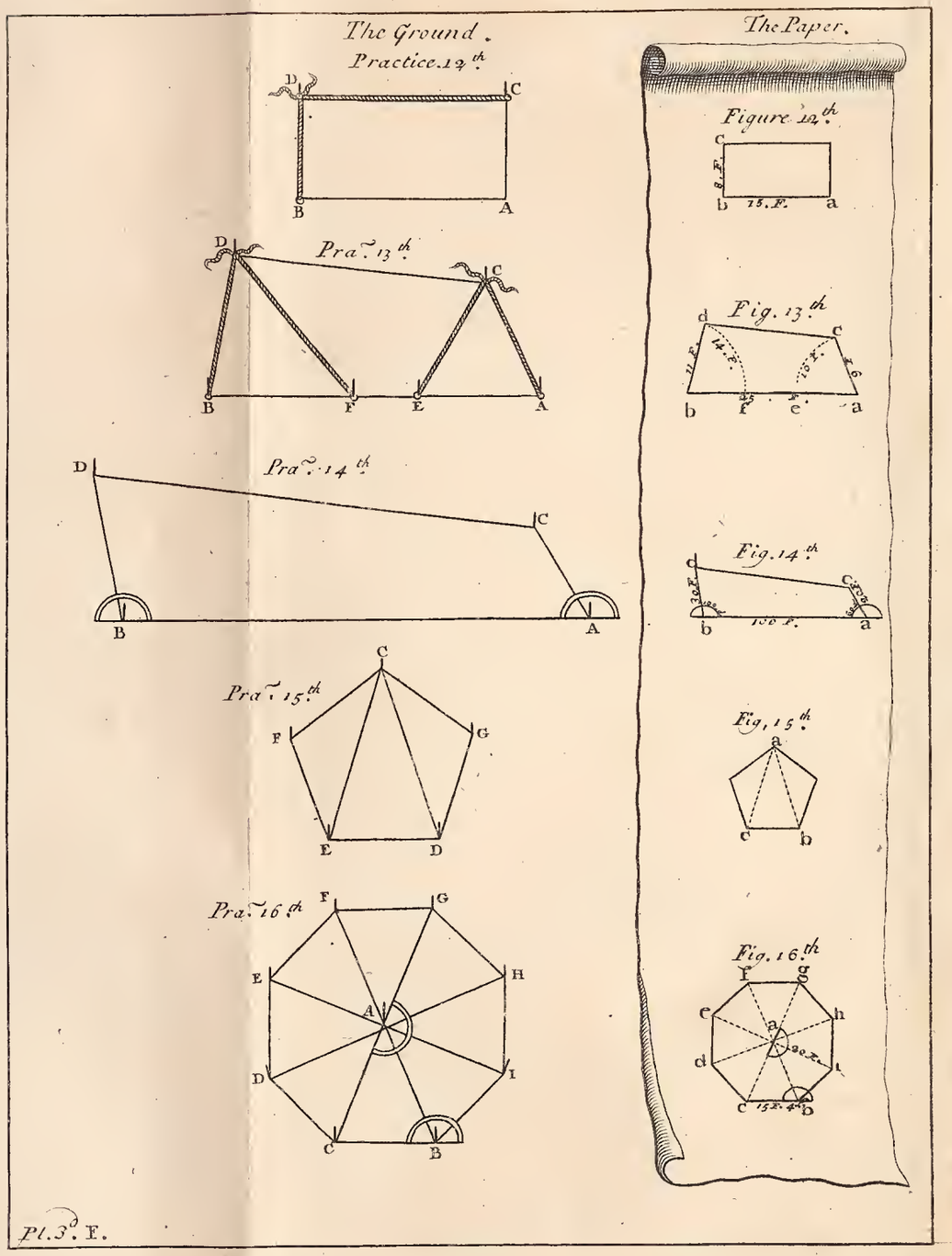
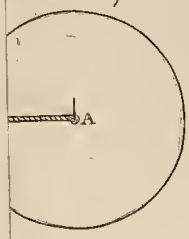


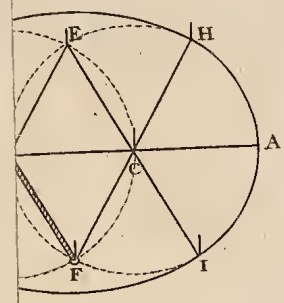

The Ground.
Practice. 12th.
The Paper.
Figure 12th.
Pra. 13th.
Fig. 13th.
Pra. 14th.
Fig. 14th.
Pra. 15th.
Fig. 15th.
Pra. 16th.
Fig. 16th.
Pl. 3d. F.

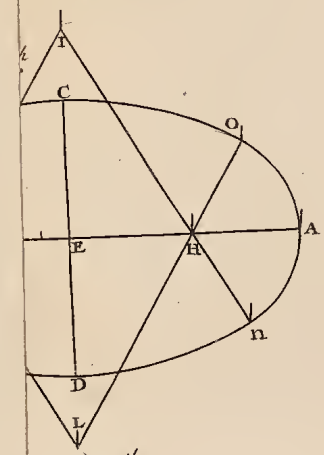
The Ground

ractice. 17th.

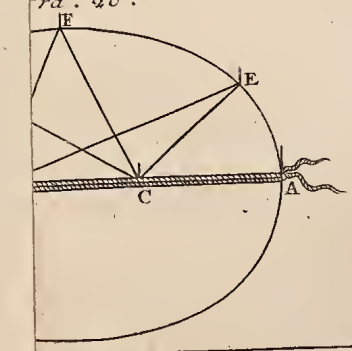


Pra. 18th.





Pra. 20th.



The Paper

Figure 17th.

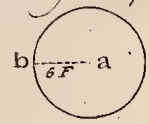


Fig. 18th

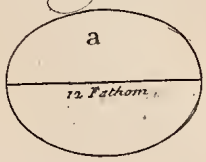


Fig. 19th

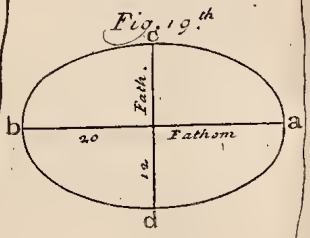
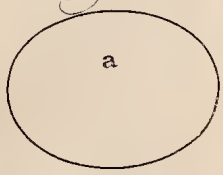
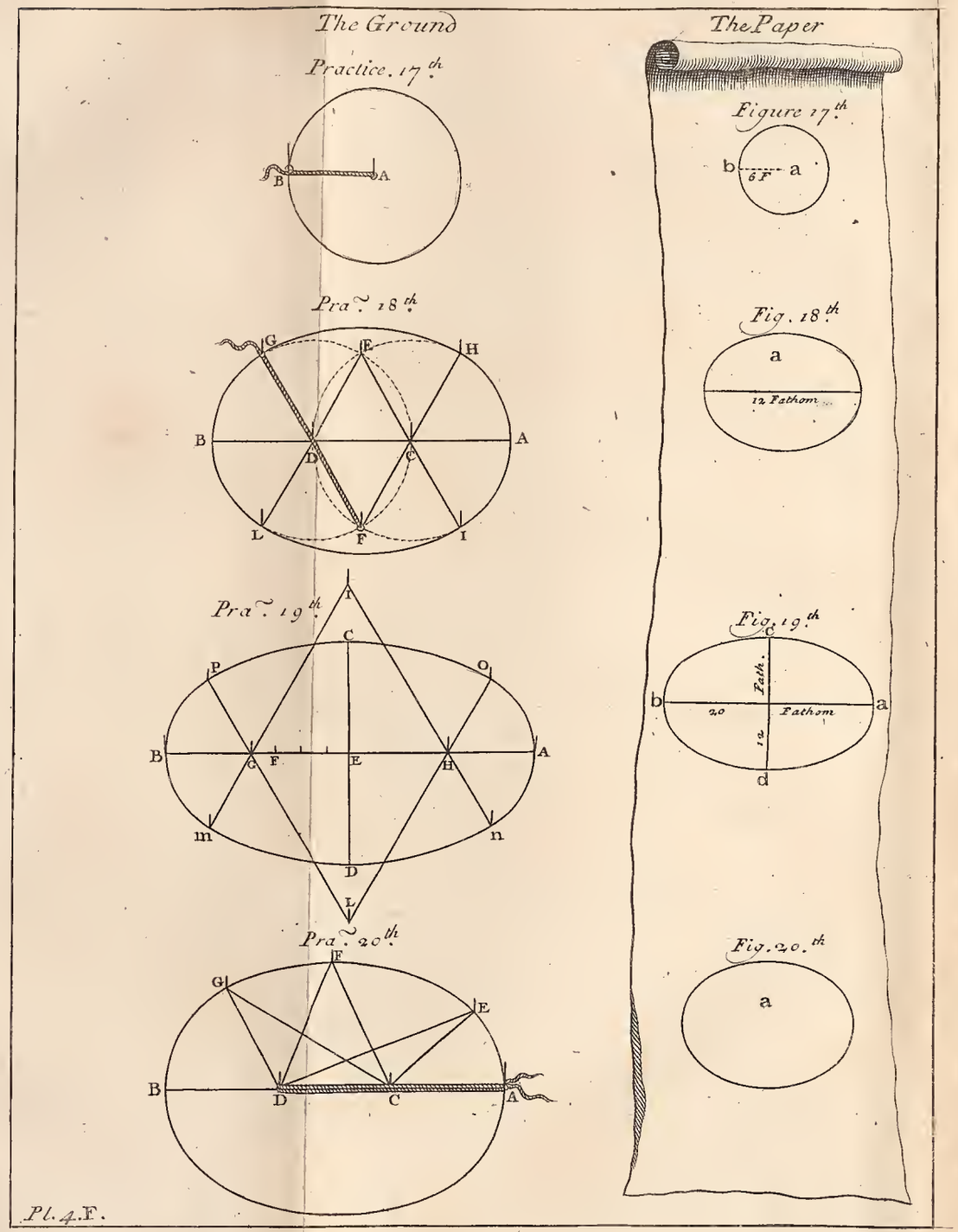


Fig. 20th




The Ground
The Paper
Practice. 17th.
B
A
Figure 17th.
b
6 F
a
Pra. 18th.
G
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D
C
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F
I
Fig. 18th.
a
12 Fathom
Pra. 19th.
I
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Fig. 19th.
c
Fath.
b
20
Fathom
a
12
d
Pra. 20th.
F
G
E
B
D
C
A
Fig. 20th.
a
Pl. 4. F.

Chap. II.

Of the Manner of making or dressing Ground, and of digging and removing the Earth.

When you have made Choice of a Piece of Ground, and determin'd the Extent that is to be enclosed with Walls, the next Work is to dress it, and bring it as near a Level as is possible. But, as the Ground proposed to be wrought upon, is almost constantly found uneaven and irregular, you are indispensably obliged, either to make it according to its natural Sloping, or to reduce it to a perfect Level.

A Piece of Ground is said to be made upon its natural Slope, when, following the Situation of the Place, without carrying out or bringing in any considerable Quantity of Earth, you do no more than fill up the Holes, or level the Banks, so that the Ground be laid eaven and uniform throughout, according to its natural Declivity.

It is called making a Piece of Ground perfectly level, when, by means of an Instrument call'd a Level, it is laid with such Exactness, that no manner of Slope remains thro' the whole Extent of it.

'Tis very rare to find Ground that can be reduced to a perfect Level; besides its ordinary Situation, which is constantly uneaven, and somewhat sloping, the Expence necessarily required to move the higher Parts of it to the lower, discourages People from courting this Perfection. Most Men choose rather to make Ground upon its natural Slope, so as to render it agreeable and insensible to the Eye, and scarce at all tiresome to the Foot, which has this Advantage too, that its Sloping serves as a natural Current for the Floods and

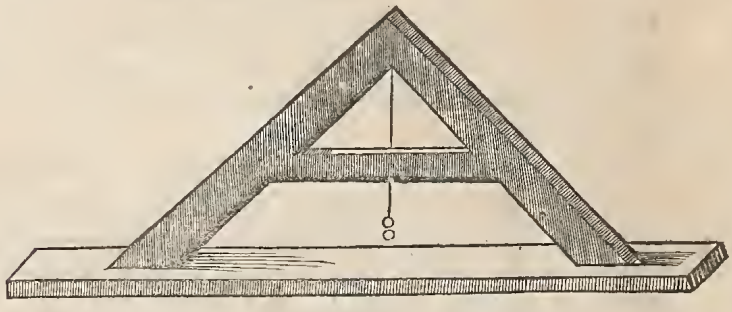
Rain-

Rain-Water. However, becauſe one is ſometimes obliged to lay certain Parts of a Garden to an exact Level, as the Alleys about Water-works, Canals, *&c.* I ſhall here give the Manner of doing it.

THERE is an infinite Number of Inſtruments made uſe of for leveling upon the Ground, every one contriving them after his own Way; and, to hear what moſt ſay, there is no Level ſo exact, as that which they have invented, and adviſe the Uſe of, excluſive of all others: But as, in Gardening, we are not to ſtand upon Niceties, and that the Uſe and Facility of a Level is what is moſt to be regarded, I ſhall propoſe but two, the Water Level, and the ordinary common Level.

THE Water Level is the beſt and moſt exact, and is therefore made uſe of for taking ſuch Riſings and Fallings of Ground as are conſiderable, eſpecially with relation to the conveying Water into a Garden. For which Reaſon I ſhall not ſpeak of it in this Place, but reſerve its Uſe to be ſhewn in the laſt Chapters of this Book, which treat of Fountains, and the Conveyance of Waters.

THE ordinary and common Level, though inferior to, and leſs exact than the other, is ſufficient, however, for the whole Buſineſs of leveling a Garden. 'Tis this Level that is commonly employ'd in Gardening, the Uſe of it is very eaſy, and the Readineſs of meeting with it every where, makes it willingly preferr'd to any other.



THIS Inſtrument is no other than a Square or a Level, like that uſed by Maſons, and other Artificers, as the Figure demonſtrates. The larger it is, the better for the Work; however, three Foot Length for each Side is enough. Tho' the

the Uſe of it be very common, I thought it not improper to inſert it here, for the Information of the Curious, and ſuch young Perſons as are willing to improve themſelves in Gardening, reforming it from ſome Abuſes brought in among Gardeners, and adding ſome Particularities but little known, which tend to a more ready and complete Performance of the Work.

BUT before I proceed to the Uſe of this Level upon the Ground, it may be requiſite to make the following Obſervation.

THE Words Dreſſing, Leveling, making eaven and ſmooth, are equally made uſe of to ſignify the Action of harrowing or raking the Ground, to lay it every where ſmooth and eaven.

WE call it Settling the Ground, when, by rolling it with great wooden Rollers, or by walking and treading upon it, we render it ſo cloſe, that it cannot be preſs'd or ſunk lower.

TO range, level, or trace out any thing, there muſt be at leaſt three or four Perſons employed; ſome to carry the Stakes, and to change and remove them, as ſhall be directed; others, to ſtrain and ſhift the Line. You may obſerve, there is no need to ſpeak in working, eſpecially at great Diſtances, where the Voice is eaſily loſt; and as you can't be underſtood afar off, you may have Signs agreed upon one with another, and ſhew with the Hand whatever you would have done: For Inſtance, if, in ranging a Stake upon a Line, the Stake ſtand too much to the Left, you muſt ſhew, by drawing your Hand to the Right Side, that the Stake ſhould ſtand more to the Right; and ſo raiſing or lowering the Hand ſignifies, that the Stake ſhould be ſet higher or lower; which Example may ſerve for all that is poſſible to be explained by Signs.

FOR levelling you ſhould make uſe of a proper Day, when it is ſtill Weather, not too hot nor too cold; when it neither blows nor rains, and when there is not much Sun: All theſe are very injurious to the Sight, by the Refractions that make a great Diverſity in lowering or raiſing the Viſual Ray. A Day ſomething cloudy and over-caſt, is beſt for le-

veling, for the Stakes will then be ſeen beſt, and the Eye will more eaſily diſtinguiſh Objects that are far off.

'TIS uſual to put Linen-Rag, Paper, or Card, upon the Head of the Stakes or Ranging-Sticks, ſlitting the Head of them a little, and putting the Paper or Card into the Slit; which is a very great Eaſe and Relief to the Sight, eſpecially in Lines of great Length. When the Paper or Rag is not ſeen plain enough, you cauſe a Man to hold his Hat behind the Stake, the white Paper appearing much plainer by the Oppoſition of the Black of the Hat; and, by this means, the Perſon that bourns may more eaſily diſtinguiſh all the Heads of the Stakes.

'TIS very material in leveling, that the Heads of the Stakes be made very flat and ſmooth; for the Line of Aim ſhould run exactly upon the Heads of them, and cut them eaven, and 'tis theſe that regulate the Level of the Surface of the Ground.

IT is call'd Earthing or Banking up a Stake, when, being drove into the Earth, 'tis found too high for the Meaſure required; as if a Stake were ſix Foot out of the Ground, and it ſhould be but four or five, according to the Level; you then cauſe Earth to be brought, and make a Bank about the Foot of it, till it be of a due Height; ſo when a Stake is too low, you clear it at the Foot, and carry away the Earth, till it has the Height it ſhould have.

'TIS to be obſerved, that when we ſpeak of making a * Pattern-Line, or Furrow, 'tis not to open the Ground, as in planting Paliſades, which ought rather to be call'd a Trench; but 'tis to bring in Earth, and lay it along a Line ſtrained from one Stake to another, which forms a Pattern that ſerves to redreſs the Uneavenneſs of the Ground. Theſe Pattern-Lines may be from twelve Inches to two Foot broad; the Earth ſhould be trod upon to ſettle it, and afterwards raked over with a fine Rake, till the Line juſt touches and grazes upon the Surface of it every where alike, without being confined. Furrows are ſometimes cut for the ſame Purpoſe in the ſolid Earth, as when the Ground is too high, or upon Banks and Slopes; in which caſe the Line is ſtrained, and the Earth cut away, till it bear equally throughout.

* Rigole, Raïon ou Repaire. *When theſe are raiſed, our Gardeners call them Pattern-Lines; and when they are cut into the Ground, Furrows.*

THEY

THEY make uſe of ſmall wooden Stakes or Spikes, which are drove down eaven with the Ground, and quite overhead at the Foot of the Leveling-Sticks, by ſetting upon them the ſtanding Meaſure, and reducing them exactly to this Height, when they would not bank up, or clear the Earth from the Stakes, which is left to a Man's own Choice. Theſe Spikes are alſo of uſe to recover the Meaſures, in caſe the Leveling-Sticks ſhould be moved, or that they ſhould be voluntarily taken up as ſtanding in the way, and to ſtrain the Line from the Head of one to the other, for making the Pattern-Lines abovemention'd.

WHEN the Ground is too uneaven and rough, you muſt begin, firſt of all, to break it up with the Plough, to deſtroy the Weeds, and then harrow over every Part of it to level the Banks or Hillocks, and fill up the Cavities. This ſerves, likewiſe, to render the Earth more eaſy and friable, as well for removing and tranſporting, as for driving the Stakes, and other things neceſſary.

THERE remains no more, before I proceed to the Practice of Leveling, but to ſpeak of the Method of digging and removing Earth.

WHEN the Earth is to be dug or cut to make a Terraſs, Bank, Bowling-green, Canal, *&c.* they make uſe of Mattocks, Pick-axes, Spades, and Shovels; and there are Men who do nothing but fill the Baskets, Scuttles, and Wheelbarrows, that keep behind thoſe who dig. To forward this Work, ſuppoſing they have a great Height to cut, they undermine the Foot of it with a Pick-ax, and hollow it a little before them towards the Bottom, with this Precaution, that no Body go upon the Ground above, for fear it fall, and hurt the Men that are working below. When they have proceeded a little to hollow it round about, they cauſe the Men to retire, and getting at Top of the Ground, where ſome Pieces of Wood have been drove in, with four or five Men to help weigh upon it, they throw down vaſt Quantities of Earth at once. I have experienced, that this Method forwards the Work extremely. When they meet with Rocks or Quarries, they make uſe of Gun-powder to blow them up, by placing ſeveral ſmall Barrels of Powder at the Foot of them, to

which they give Fire, by Trains laid for that purpose; and this they call Springing a Mine.

IN digging away Ground, several Banks, which the *French* call **Witnesses*, should be left till the Work be wholly finished; these serve to measure the Quantity of Rubbish-Earth, and to pay the Diggers by, who often cheat one when these are taken away, by charging a greater Height of Ground than there was. These Diggers, or Terrass-Makers, in *France*, are paid by the Cubical Fathom, which should have six Foot every way, and contain, in all, 216 Cubical Feet; whereas the square Fathom has no more than 36 Superficial Feet.

* Temoins.

WE are now come to the Manner of removing Earth, which is a very necessary Point to be known, taking Notice, that it should be always carried as little away as is possible; these Works being very tedious of themselves, and an unconceivable Expence, how short soever the Distance be.

THERE are four several Ways of carrying off Earth, in Carts drawn by Horses, in Wheelbarrows drove by Men, in Dorsers or Hampers carried by Horses or Asses, and in Baskets upon Mens Backs. The best of the four is, without Doubt, that which goes fastest, and costs least; but the Difficulty lies in knowing well which that is.

THE first, which is to carry away the Earth in Carts, is that which costs most, a Horse and Man being necessary for this purpose, so that it is rarely made use of, but to clear the Rubbish from Buildings, or in small Gardens in the City, where there is but little Earth to be taken away: But in great Gardens, where there is oftentimes a vast Quantity of Earth to remove, the three other are to be preferred. One can scarcely determine which is the best, some being for Baskets and Wheelbarrows, and others for Panniers carried by Horses or Asses. If Men that drive the Wheelbarrow, or carry the Basket, would make Conscience to do a good Day's Work, I should prefer them: But as those People are generally intolerably lazy, and have no Concern but to spin out the Day, unless you have Men on purpose to look after them; I esteem the way of carrying upon Asses Backs to be the best of all. My Reason is this.

ALL

ALL Baskets and Wheelbarrows hold about a Foot Cubical of Earth; the Panniers that these Beasts carry hold about the same Quantity: But, as an Ass has two Panniers, he carries twice as much at a Time, so that one Turn of the Ass is as good as two of the Basket or Wheelbarrow, and costs very little more, though there be a Woman or little Boy to lead him. There is, besides, a good Reason for esteeming these, for that the Asses loiter but little, they are used to a certain Pace, which, tho' slow, forwards the Work however, because 'tis constant from Morning to Night, without any other Interruption, than that of a Baiting-time.

IF you have a mind to make use of Men that drive Wheelbarrows, and carry Baskets, 'twill be absolutely necessary to have People set over them to hasten them; these, in *France*, we call * *Piqueurs*, whose Business it is to prevent their holding Discourse, and loitering the Time away one with another; and above all, that they hinder not each other, but have different Ways made for them to go and come. The Wheelbarrow-Men make five or six Stages, according to the Length of the Way, delivering full Barrows, and taking back empty ones, which is a way of managing pleasant enough.

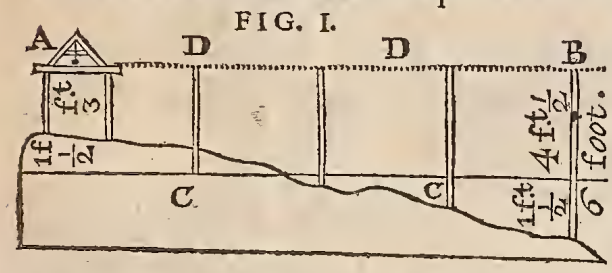
* *Foremen, or Overseers.*

THE FIRST PRACTICE.

To set out a Level Line upon the Ground.

SUPPOSE the Ground be upon a flat Situation, as that of a Plain, and you would reduce it to a perfect Level, you must do thus: Chuse as eaven a Place as you can upon one of the Extremitys of the Ground, as *A*, where fix two Stakes of five or six Foot high with very smooth Heads, for laying a Mason's Rule upon them of eight or ten Foot long, which should be very strait, and

FIG. I.



and ſtiff enough to lie without bending. Upon the Middle of this Rule ſet your Level, as you ſee at the End *A*, ſo that the Plummet at the End of the Line, fix'd to the Head of the Level, light and fall exactly upon the Notches made on purpoſe in the Angle, and upon the Croſs-Leg of this Inſtrument. If your Level riſe higher on one Side than the other, ſink the Stake on that Side it riſes, till it be of the ſame Height as the other; and in this Manner order theſe two Stakes, by raiſing and lowering them, till the Level be exact. Then take the Level off the Rule, and placing yourſelf at the End *A*, caſt your Eye along the Rule, and direct Stakes to be drove, at convenient Diſtances, the whole Length of the Encloſure, as from *A* to *B*; and let them be ſunk or raiſed ſo that their Heads ſtand exact to the Height of the Rule, and exceed not the Line of Aim *D D*. This
FIG. I. done, meaſure the Stake at the End *B*, whoſe Height, for Example, let be ſix Foot: Meaſure likewiſe one of the two that bear the Rule at the End *A*, whoſe Height ſuppoſe but half the other, that is to ſay, three Foot. Take the Difference of theſe two Heights, which is three Foot, and divide it into two, which makes one Foot and a half; and cauſe a Foot and a half of Earth to be taken from the Extremity *A*, and brought to that of *B*; but take heed, in removing this Earth, you ſtir not your Stakes and your Rule, which may be of farther Service to you. You are ſure, by this Operation, to have the Line *C C* perfectly level, being parallel to the Line of Aim *D D*. The Reaſon of which is, that the Stakes having ſix Foot Height at the End *B*, and having but three at the End *A*, in lowering the Ground a Foot and a half at *A*, and raiſing it as much at *B*, the Stakes will be four Foot and a half high equally throughout.

THE SECOND PRACTICE.

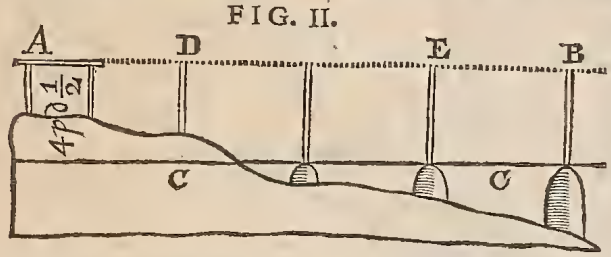
To lay a Piece of Ground ſtrait and eaven, according to a Level Line.

To make the Level Line *CC* entirely ſtrait and eaven, after you cauſed the Earth to be moved in groſs from the End

End *A* to that of *B*, take a very ſtrait Stick, and meaſure, at the End *A*, one of the two Stakes that bear the Rule, whoſe Height is ſuppoſed to be four Foot and a half, including the Breadth of the Rule: Cut the Stick off to this preciſe Length, which ſhall be a portable Meaſure for all other Stakes, gaging it from the Head in this Manner. Take the Stick, and apply it along the Stake *D*, which is no more, ſuppoſe, than three Foot high; and bring this Stake to four Foot and a half, by cauſing the Earth to be cleared from the Foot of it till it be of this Height. Then carry your Meaſure to the Stake *E*, which being higher than it ought, that is, more than four Foot and a half, you bank it up by cauſing Earth to be laid about the Foot of it, which you beat and ram down, leſt it ſhould ſettle. Thus, having brought the Stake *E* to a fit Height, you proceed to the others; and by the ſeveral Works inſtanced in theſe two Stakes, you order them all in like manner, directing thoſe to be banked up that are too high, and thoſe to be cleared at Foot that are not high enough. This done, you take a Line of 12 or 15 Foot long, which you tie to the Foot of the Stakes *B* and *E*, and ſtrain it as tight as you can; and in caſe the Stakes *B* and *E* are too far aſunder for your Line of 15 Foot, you ſet another Stake betwixt them of the ſame Height; you then cauſe Earth to be brought, or the Ground to be cut away along the Side of this Line, to make a Pattern-Line or Furrow; and do the ſame from Stake to Stake, ſtraining the Line, and making Furrows from one to the other, by which means you have the Line *CC* made very ſtrait, and perfectly level.

FIG. II.

FIG. II.

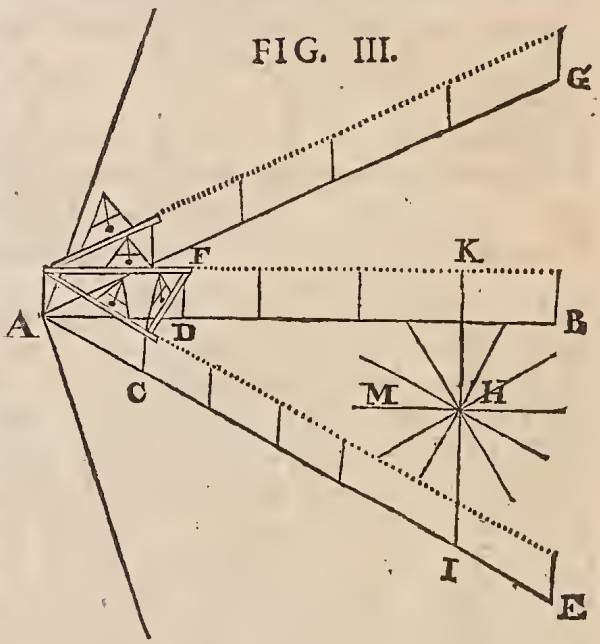


THE

THE THIRD PRACTICE.

To dreſs an entire Piece of Ground, how large ſoever, and to lay it level.

FIG. III. THE Pattern-Line *AB* being carefully made, according to the foregoing Practices, let the Stake *A* be conſider'd as immoveable, being of Uſe to perform the ſame Operation ſeveral Times, for finiſhing and laying out the whole Ground, in the following Manner. On the Line *AE* fix the Stake *C*, much about the ſame Diſtance from the immoveable Stake *A*, as that of *D*, which ſhould not exceed three or four Foot at moſt. Then lay the Rule, and adjuſt the Level upon the Stakes *A* and *C*; and to prove the Truth of this Operation, do the ſame over the Stakes *C* and *D*, which forms a Triangle with the two Lines *AB* and *AE*, and may ſatisfy you as to the Exactneſs of your Performance. Then ſtake out, by the firſt Practice, the Line *AE*; and, by the ſecond, lay it exactly level, making a Pattern-Line of Earth. This done, place another Stake, as *F*, about the ſame Diſtance from the immoveable Stake *A*, as the Stakes *C* and *D* were, and about three Foot likewiſe from the Stake *D*. Set the Level upon this for directing the Line *AG*, proving the Truth of the Work, as was now mention'd, that is to ſay, by laying the Level acroſs again upon



upon the Stakes *D* and *F*. Finish the Line *AG* in the same Manner you did the Line *AE*, and so continue to direct the Levels, and make Pattern-Lines throughout the whole Ground, observing to keep these Lines much about the same Distance one from another, as those that are already made; which being done with all necessary Exactness, you complete the Making of the whole Ground, by causing a Line to be held by two Men, who are to strain it very tight across from one Pattern to another, or rather from one Stake to another, by the Help of which you take off the Banks, and fill up the Cavities between the Patterns, raking it all over: But as towards the Extremities of the Lines *B E G*, the Pattern-Lines are sometimes so far asunder, that the Cord can't be conveniently strained from one to the other, you may remedy this Inconveniency, by planting the Stake *H* between the two Pattern-Lines *AE* and *AB*, so that the Head of it range with two Stakes already set, as *I* and *K*. Adjust the Stake *H* to the Height of the others, and tying a Line to the Foot of it, you strain it every way, filling in or taking away Earth, as Occasion requires; and following it with the Rake, which levels the Space contained between the Stakes *IKEBM*. Do the same for leveling the Places between the other Pattern-Lines, which will make your Ground, how large soever, equally smooth and eaven throughout.

OBSERVATION.

As in a large Garden it would be very expensive to make the whole Ground according to this Rule, it may suffice to dress and lay eaven the Places exposed to Sight, such as are to serve for Parterres, Halls, Galleries, *&c.* and for those that are designed for Wood, you dress only the Alleys and Ridings, leaving the Squares and Middle-Parts of the Wood uneaven and natural, as they are.

THE FOURTH PRACTICE.

To dress a Piece of Ground upon a Hanging or Slope-Line.

WHEN you meet with Ground naturally situated upon an easy Rise, and would not be at the Charge of removing all the Earth, to reduce it to a perfect Level; you may dress it upon its natural Slope, in such Manner, however, that the Rise may be so easy and imperceptible, as not to be discerned in Walking, as it may be half an Inch or an Inch in a Fathom, according to the Length of the Side; to perform which, you do thus: Fix a Stake about four Foot high out of Ground, upon the uppermost Part of the Piece, as at *A*, leveling a little Spot for that Purpose; and fix another of the like Height at the End *B*, which is supposed to be the lowest Part of the Ground; then plant as many Stakes as are necessary betwixt these two, keeping their Heads in a Line with the Heads of *A* and *B*, that they exceed not the Visual Ray *DD*. After which, take a Gage-Stick, or portable Measure of four Foot long, and apply it to all the Stakes, reducing them to the proper Height of four Foot, by earthing them up, or digging away the Ground, as Occasion requires. This done, make a sloping Pattern-Line from *A* to *B*, as is taught in the second Practice; and by that you take away the Serpentine Surface, and correct the Inequality of the Ground, which should be laid very smooth, according to the Slope-Line *CC*.

FIG. IV.

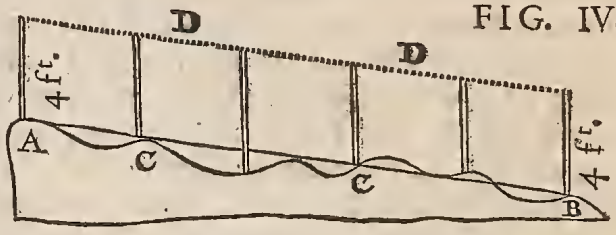


FIG. IV.

THE FIRST OBSERVATION.

IF you would lay out the whole Ground upon a gentle Slope, you perform the same Work several Times through the whole Extent of it, and finish it by Pattern-Lines and the

the Cord, as was juſt now ſhewn in the foregoing Practice, with this Difference only, that the Pattern-Lines muſt be ſloping.

THE SECOND OBSERVATION.

I MUST not omit to mention here, that the Place you deſign for a Parterre, after having been dreſſed as above-mentioned, requires ſtill another Work, which is to clear it of the Stones, and to run the upper Part of the Earth through the Screen, and to ſmooth it afterwards with a fine Rake: Without this it will not be fit to be checquer'd, and to trace out the Branch-work of the Embroidery.

THIS is the beſt way that I know, to level and to dreſs Ground, and the eaſieſt and leaſt puzzling in the Execution. Here are none of the ill Cuſtoms that are ordinarily follow'd by Levelers; as amongſt others, that of lying along upon their Bellies, digging Holes in the Ground to ſit in, and kneeling down to the Height of the Ruler.

HAVING now deliver'd the Practice of Dreſſing Ground, ſituate either upon the Flat, or an eaſy Slope; there now remains only to ſpeak of the Manner of making a Ground ſeated upon a Mountain or Hill-Side, which can be done no otherwiſe, than by the Help of Terraſſes; and this is what is to be found in the following Chapter.

CHAP. III.

Of different Terrasses and Stairs, with their most exact Proportions.

'TIS in this the greatest Expence of a Garden consists, and about which you ought to take the greatest Care, when there is an absolute Necessity, by reason of the too quick Declivity of the Ground, to support the Earth with Terrasses. There is no Dispute but the Transporting and Removing of Earth is a vast and excessive Charge; yet 'tis an Expence so little seen, that though one of the most considerable, it does the least Credit to its Master. We are apt to think, when we see a Garden well made, with Terrasses exactly level and well supported, that it must have been disposed so by Nature; so that to know any thing of Works of this Kind, we must have seen them performed, for they are hardly to be apprehended, when finished and complete. You can't then be too circumspect and wary in Undertakings of this Sort, if you would avoid the Follies and Mistakes that some Men daily run into.

WHEN you meet with a Piece of Ground whose Shelving
FIG. I. is very steep, as perhaps of the Hill *A*, which you would make practicable for a Garden, it may be order'd three several Ways.

First, By making Terrasses one above another, at several
FIG. II. Heights, and supporting the Earth with sufficient Walls of Masonry.

Secondly, By making such Terrasses, as will support them-
FIG. III. selves without a Wall, by Means of Banks and Slopes cut at the Extremity of every Terrass.

THE

THE *Third* Way is, to make no Terrasses in strait Lines, nor long Flats between; but only to contrive Landing-Places, or Rests, at several Heights, and easy Ascents and Flights of Steps for Communication, with * Foot-Paces, Counter-Terrasses, Volutes, Rolls, Banks, and Slopes of Grass, placed and disposed with Symmetry, which are called Amphitheatres. These Foot-Paces and Counter-Terrasses, are sustained by low Walls of Masonry, or by Stakes drove at the Corners of them. The Amphitheatres are adorn'd with Flowring-Shrubs, Yews, and Horn-beam-Hedges Breast-high, with Vases, Cases, and Flower-Pots, set upon Plinths of Stone. Nor must Figures and Fountains be here left out, as making the Perfection of these Pieces, whose Diversity, as well in the disposing, as in what they consist of, yields a very agreeable Prospect to the Eye, as may be seen in the Design here given. FIG. IV.

* Estrade *is properly the Step on which the Bed is set in an Alcove, or upon which a Throne is raised.*

OF these three Manners, that with the Slopes is the least Expence, and that of the Amphitheatre the most magnificent; so that Terrass-Walls may be reckon'd to hold a Medium between the other two: That always ought to be chosen, which agrees best with the Situation of the Place, and the Charge one would be at in the Performance.

THE Architect, or he that is to give the Design of a Garden, should carefully consider the Slope and Winding of the Hill, and raise and describe the Profil of it very correctly; that by making the best Advantage of the Situation, and distributing its Terrasses with Husbandry and Discretion, there may not be a great deal of Earth to remove, but that what is taken from Places that are too high, may serve to raise and make good those that are too low, which should be done with such Prudence and Circumspection, that you should neither be obliged to bring in Earth, nor have any to carry away, when your Terrasses are finished.

I SHALL observe the same Order here, as I have done in the foregoing Chapters; explaining certain Terms, and making some necessary Observations, before I enter upon the Practice of the Construction of Terrasses. The Observations that are in these three Chapters, though separated, have such Relation to each other, that they may equally serve

every

every where; but as they would have been too long and tedious all together, I have endeavour'd to set each of them in its proper Place, and to choose such as suit best with the Subject of each Chapter.

TERRASSES should not be made too frequent, nor too near one another, that is, you should always make as few of them as possible; and by means of * Levels, or Flats, continued as long as the Ground will permit, endeavour to avoid the Defect of heaping Terrass upon Terrass, it being very disagreeable in a Garden to be constantly going Up-hill, or Down-hill, without finding scarce any Resting-Place.

* Plein-pied.

WHAT we call the Level, or Flat, is the Space of Ground contained between the Slopes of two Terrasses, that is to say, the Platform sustained by the Walls or Banks of the Terrasses, which, in Fortification, is call'd the *Terra-plain.*

WHAT is meant by taking the Profil of a Mountain, is, to level the Slope of it exactly, and to quote all the Stations upon a Plan, for gaining precisely the Crooks and Windings of it, and adjusting them afterwards to the general Disposition of the Garden.

'TIS called Observing Downwards, which is a Term much in Use among Workmen, when they begin to reckon from the Top of a Pole, Descending, to set down any Measure; as 'tis called Observing Upwards, when they begin Below, and work Ascending.

IN the following Operations, the same Level is made use of, and is applied in the same manner, as was taught in the preceding Chapter; and so likewise are the Line and the Rake for eavening and smoothing the Ground, and for making the Pattern-Lines and Furrows.

TO the Use of Stakes and Spikes, must be here added that of long Poles of 15 or 20 Foot Length, because Stakes are too short for leveling Stations upon the Descent of a Mountain. These Poles are set upright on end by a Plum-Rule.

WHAT we call Station, is the Place where the Level is set for performing the Work of Leveling, so that one Cast of the Level is contained between two Stations.

THE

THE † Verge-Line, in the Business of Terrasses, is the Place where the Corner of a Wall, or the Bank of a Terrass, comes to terminate.

† Ligne d'arrêt.

THERE are also many other Terms in Use among the *French*, which I shall not take upon me to explain, lest I go too far from my Purpose.

YOU must constantly observe to lay your Terrasses, with a small insensible Declivity for carrying off the Water, as an Inch, or half an Inch in a Fathom, on the Length of the Terrass: And this Shelving is always to be made * lengthwise of the Terrass, and never breadthwise.

* *What is here called the Length of the Terrass, is most commonly the Breadth of it in our Gardens; but this Fall is always to be understood to drop the same way as the Side of the Hill does.*

'TIS much better to cut your Banks out of the solid Earth, than to build them up with made Ground and Hurdles; they keep infinitely better when they are natural, and cost less the Making: However, when you cannot do otherwise, you must make use of Hurdles and Fascines, and secure the Earth by several Beds, as is taught at the End of this Chapter.

THE FIRST PRACTICE.

To cut a Hill lengthwise into Terrasses sustained by Walls of Masonry.

LET the Steps of the Building *A*, situate upon the Top of a Hill, be the Place where you would have the first Terrass begin: Measure, upon the Profil, *Fig.* 2. the Length of this Terrass, which is quoted 30 Fathom; and let a pretty long Pole be held at the End of 30 Fathom, as at *B*, *Fig.* 5. putting a Piece of Paper or Linen-Rag about the upper End of it. Make a little Spot smooth at the Foot of the Building, as at *A*, and plant your Level there for making a Pattern-Line, as was taught above in the first Practice of the foregoing Chapter; with this Remark, to sink or raise the Pole at *B*, till the Head or upper End of it be exactly in a Line with the other Heads of the Stakes, that is to say, till it range precisely with the Line of Aim *E*. Set this Pole very upright, by a Plum-Rule, and work up the Foot of it with Rubble in Plaister, for fear its own Weight, or the Wind,

FIG. V.

Wind, ſhould throw it down, it not being ſufficient barely to drive it into the Ground, as you do the Stakes. Then take the Height of one of the Stakes that bear the Ruler upon which the Level was ſet, including alſo the Breadth of the ſaid Ruler, all which is here ſuppoſed to be four Foot; and meaſure four Foot downwards upon the Pole *B*, adding what is neceſſary for the Declivity, or Fall, in 30 Fathom, which here may be 15 Inches, making in all five Foot three Inches, which being marked upon the Pole with a Piece of Charcoal, determines the Level and Fall of the Terraſs. This done, meaſure the Height the Terraſs ought to have, according to the Profil, *Fig.* 2. which is quoted 15 Foot, and ſet 15 Foot downwards again from the Charcoal Mark before made, and let the Foot of the Pole be cleared or banked up as the Ground requires, exactly to this Height. In like manner make a little Spot eaven at the Foot of the Pole *B*, as you did at *A*, for ſetting the Level; and let another Pole be planted at *C*, according to the Diſtance ſpecified in the Profil, thus repeating the ſame Work at every Station down to *D*, you dreſs all the Lines of your ſeveral Levels.

OBSERVATION.

THIS Work being done, affords you only one ſingle Line upon the Length of the Hill, and at one of its Extremities; wherefore, to complete the entire Making of your Ground, the following Practice muſt be added.

THE SECOND PRACTICE.

To make the whole Ground of a Hill breadthwiſe, cutting it into Terraſſes, ſupported by Walls of Maſonry.

SUPPOSE the foregoing Work to be done from the Top of the Hill *A*, where the Building ſtands, to the Bottom *D*, in as many Stations as there are Terraſſes; you muſt do as much at the other End *F*, firſt making a Level Line from *A* to *F*, near a Parallel to the Building. Place the Level upon the Line *AF*, fixing a new Stake to bear the Rule, and make

FIG. VI.

make use of the Corner Stake *A*, according to the third Practice of the preceding Chapter; and make a Pattern-Line or Furrow from *A* to *F*, planting a Stake at *F*, which must be brought to the exact Height of that at *A*, for setting the Rule and Level upon it, as you see at *F*; then going down the Hill from *F* to *I*, make the same Number of Stations as you did at the other End from *A* to *B*, always observing to make the Terrasses of the same Lengths and Breadths, as near as possible; and at every Station carrying a Level Line across from one Pole to the other, as from *B* to *G*, from *C* to *H*, and from *D* to *I*, to regulate the Level of each Flat. This done, you lay the whole Extent of these Terrasses to rights, by the Help of Furrows and Pattern-Lines made down the Middle, and from Side to Side, answering the Level of the two Lines at the Extremities *A* and *F*, according to the third Practice of the foregoing Chapter.

OBSERVATION.

YOU cannot finish the Verge-Line of the Terrasses till after the Walls are built: When that is done, you may fill up the Holes to the Level of the Ground, which is usually kept for the last Work, to take up the Earth that may possibly remain to be disposed of.

THE THIRD PRACTICE.

To cut a Hill lengthwise into Terrasses, supported by Banks and Slopes of Turf.

IF, by reason of the Expence, you would not sustain your Terrasses with Walls, but content yourself with cutting the Ground into Slopes, which is the second Manner of making the Hill *A* practicable, *Fig.* 1. place your Level at the Foot of the Building *A*, according to the first Practice of this Chapter, *Fig.* 5. and measure upon the Profil, *Fig.* 3. the Length of the upper Terras, which is quoted 30 Fathom; carry this Measure from the Foot of the Building *A*, and plant a Stake at the Extremity of it, as at *B*, which shall terminate the Verge of the first Slope.

Cause a Pole to be held six Foot beyond it, which, according to the Profil, is the Foot of the Slope, as at *C*; and borning it to the exact Height of the other Stakes, set it very upright, and work up the Foot of it as before mentioned. Mark upon this Pole downwards, the Height of the Stakes the Thickness of the Ruler, and the little Fall for carrying off the Water; and setting all this from the Top of the Pole, make there a black Mark, which shall determine the Level-Line: After which, you carry a Pattern-Line from *A* to *B*. Measure downwards again upon the Pole from this Mark, the Height the Terrass should have, which is supposed to be 10 Foot; and bank up, or clear away the Earth from the Foot of the Pole, till it be of the right Height; and straining a Cord from the Foot of the Pole *C*, which determines the Bottom of the Slope, to the Foot of the Stake *B* above, which determines the Verge, you cut this Bank with the Spade, making a Furrow or Pattern-Line by the Cord; after which, you remove the Level to *C*, *D*, *&c.* where you always perform the same Work to the very Bottom of the Hill *E*.

THE FOURTH PRACTICE.

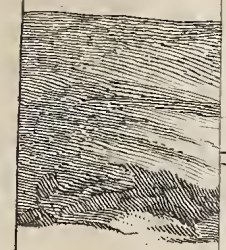
To dress the whole Ground of a Hill breadthwise, by cutting it into Terrasses, supported by Banks and Slopes of Turf.

To cut the whole Hill *A* into Slopes, and to dress it throughout, I suppose the Work abovementioned to be done upon the Profil, from the Building *A* to the Foot of the Hill *E*. You must then begin to do the same at the other end *F*, by making a level Pattern-Line from *A* to *F*, as was done in the second Practice of this Chapter. Placing the Level at *F*, you make the same Stations from *F* to *G*, from *G* to *H*, from *H* to *I*, and so to the Bottom, as you did on the other side from *A* to *E*, still observing the same Lengths and Breadths of the Flats, and to make at every Station a very level Pattern-Line from side to side. This done, before you cut the Slope, dress the whole Extent of your Flats throughout, according to the third Practice of the foregoing Chapter.

FIG. VIII.

As

fig: 1st.



Levelling for Terras-Walls.

The First Practice.

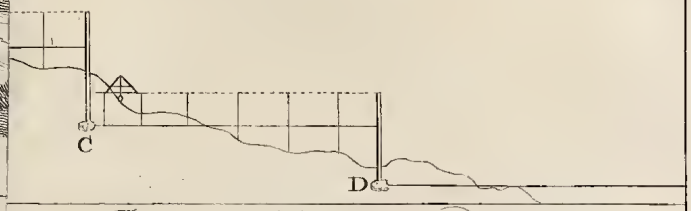


fig: 2d.

30 Fathom

The whole Plot sustain'd by Walls of Masonry

2d Practice.

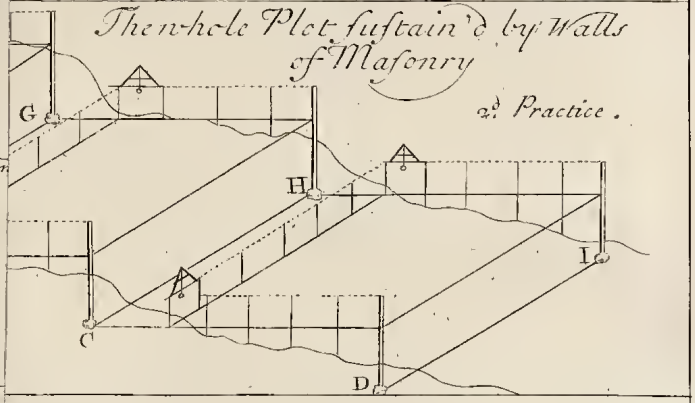
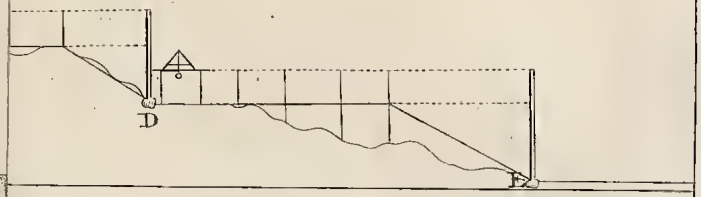


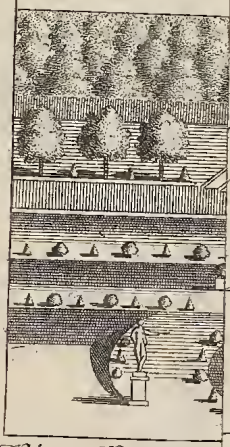
fig: 3d.

30 Fathom.

ling for Slopes of Turf.

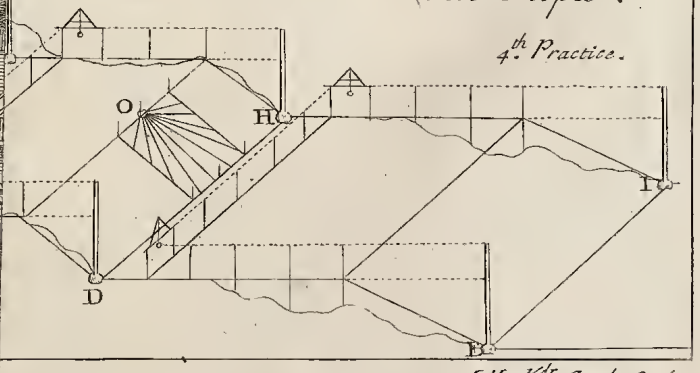
3d Practice.





The whole Plot cut into Slopes.

4th Practice.



Pl. G. Page 117

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fig: 1st. The Hill to be cut into Terrasses.

fig: 2d. The Profil of the Terrasses to be Supported by Walls of Masonry.

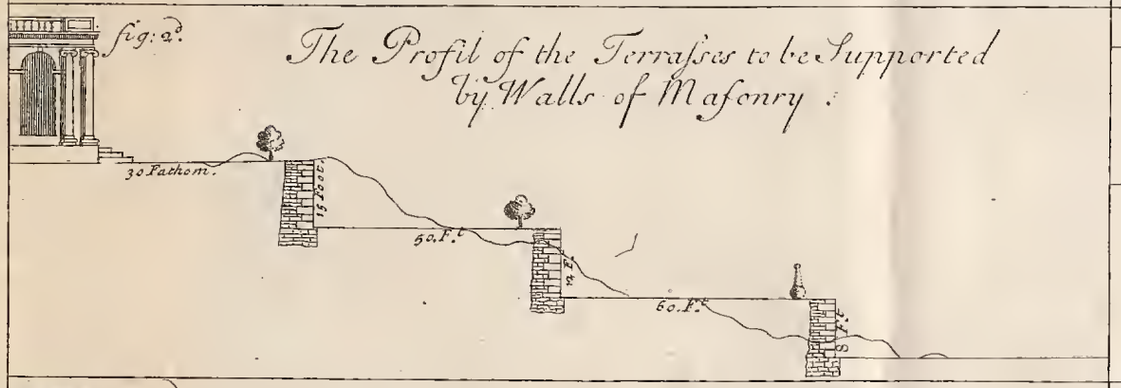
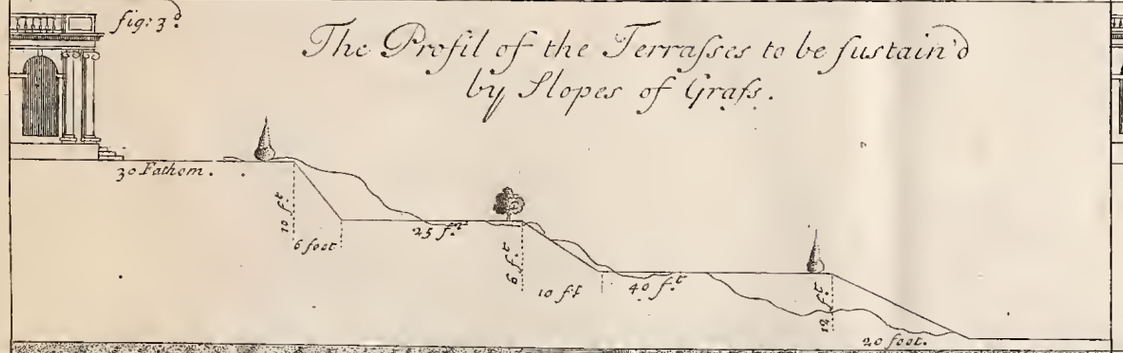
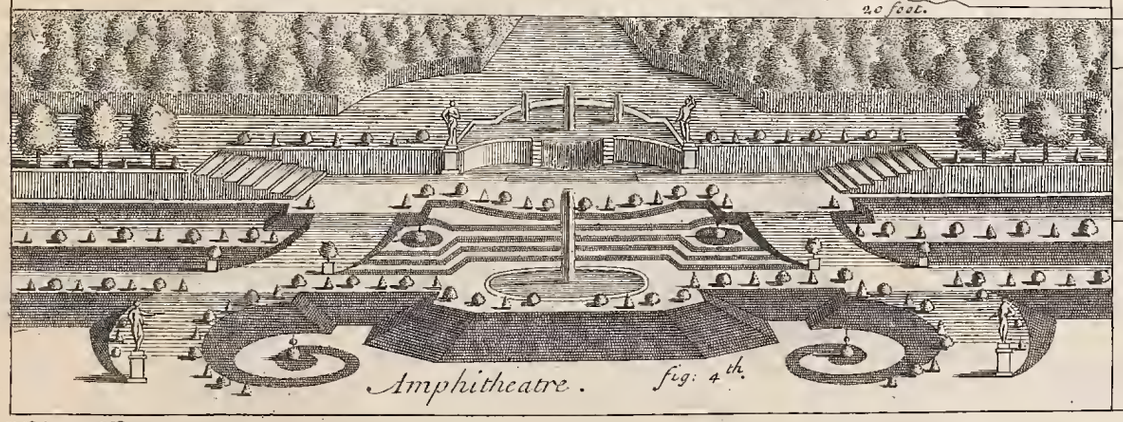


fig: 3d. The Profil of the Terrasses to be sustain'd by Slopes of Grass.





Amphitheatre. fig: 4th.

fig. 5th. The Levelling for Terrass-Walls.

The First Practice.

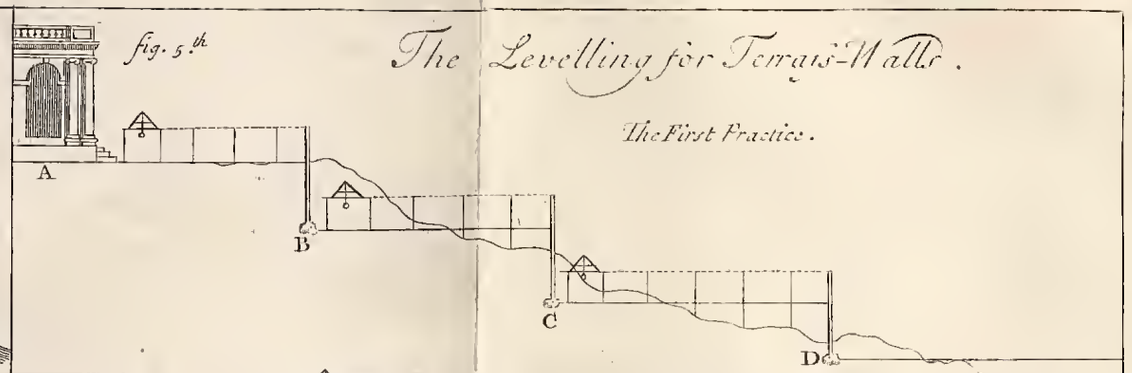


fig. 6th. The whole Plot sustain'd by Walls of Masonry

2d Practice.

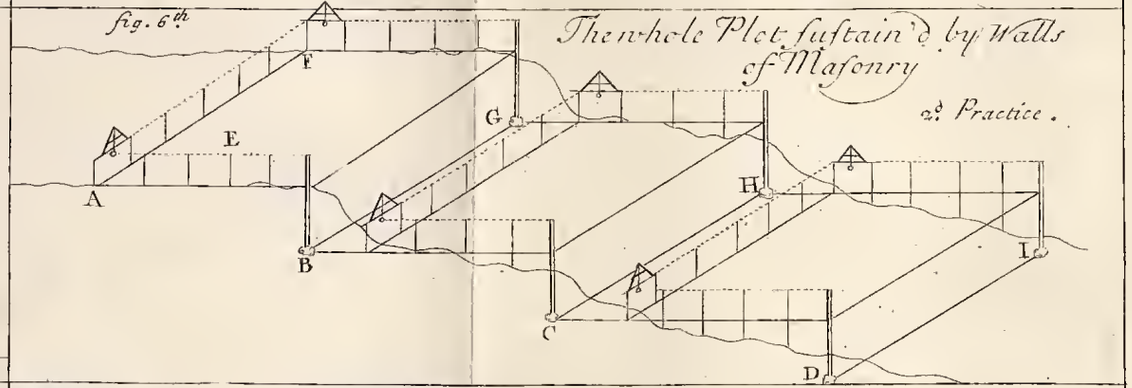


fig. 7th. The Levelling for Slopes of Turf.

3d Practice..

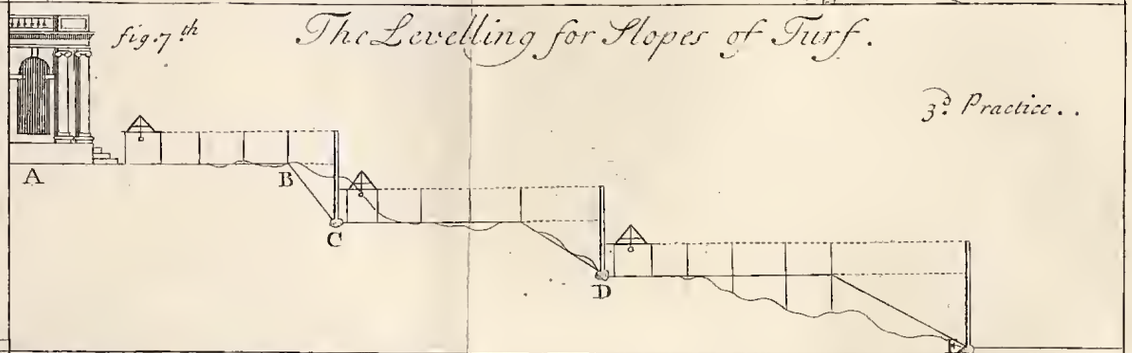
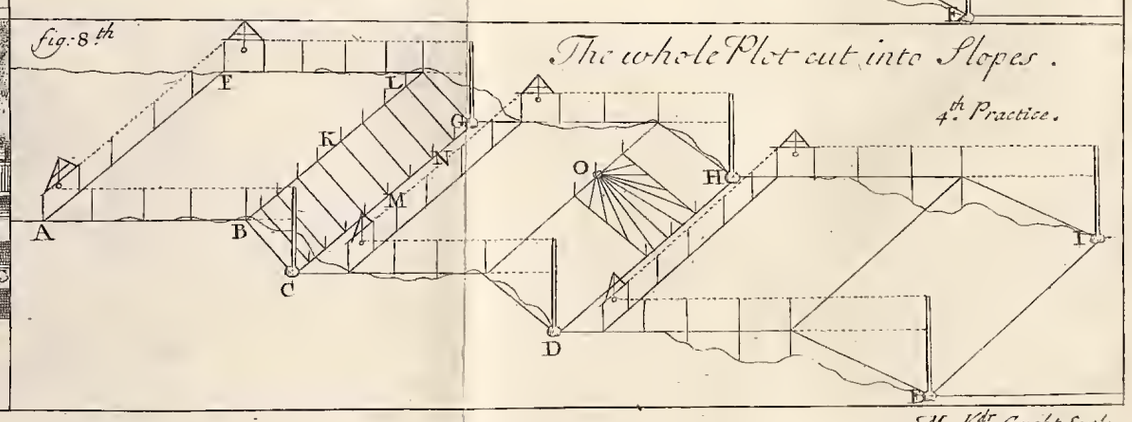


fig. 8th. The whole Plot cut into Slopes.

4th Practice.



Pl. 6. Page 117.

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As for the Banks, to cut them well, and make them exact to their Slope, you muſt, upon the Line *K L*, which determines the Verge-Line of the firſt Slope, drive a Row of ſhort Stakes at every twelve Foot Diſtance, and ſet the like Number at the ſame Diſtance in the Line *M N*, which terminates the Foot of the Slope: Then ſtrain a Cord from every Stake to its Oppoſite, and make a Pattern-Line or Furrow, a Foot broad, from Stake to Stake. For making the Slope, which is thus interſected by Furrows, do as is deſcribed upon the ſecond Terraſs at *O*; put the Loop of the Line upon any one Stake, no matter which, and ſtrain, and carry it about, every way, from one Furrow to another; following it with a Man, to cut and clear away with his Spade thoſe Places where the Earth lies too high, and keeping exactly to the Line without forcing it any way; thus making a Communication between one Furrow and another, you lay the whole Slope perfectly ſmooth and eaven with the Rake.

THE FIRST OBSERVATION.

IF the Situation be ſuch, that the Slope cannot be cut out of the ſolid Ground, you muſt then bring in Earth to make Pattern-Lines at every twelve Foot Diſtance, and ſettle and dreſs the ſame by the Cord, till every Place lie full and handſome, without forcing or bearing it up; and then fill up the Spaces between, dreſſing the whole Length of the Slope, in the ſame manner as was juſt now delivered.

THE SECOND OBSERVATION.

WHEN the Slope does not exceed ſeven or eight Foot, inſtead of the Cord, you may make uſe of a Maſon's long Ruler, that is pretty thick, and will not warp, which you bed and apply upon the Slope, and dreſs the whole Surface of it by, provided ſtill that the Edges of the Ground, above and below, are laid very level. This Method is of great uſe for the ſhort Slopes of Terraſſes and Bowling-Greens.

I SHALL not give any particular Practice here for the Business of making an Amphitheatre upon the Side of a Hill, which would be unnecessary, because these Pieces being composed of Terrasses, Banks, and Slopes of Turf, you need only follow what has been just delivered concerning them in the foregoing Practices.

IF your Slopes are not cut in the solid Ground, and the Earth brought in to make them can't support itself, there is then required a great deal more Work in their Construction, and you will be obliged to make use of wattled Hurdles and Fascines, in the following manner.

AFTER having laid the Earth one Foot high, beginning at Bottom, you must spread upon it a Bed of Fascines, or Hurdles, six Foot wide, in Rows one against another, and dispose them so, that the great Ends, or Roots, may lie next the Face of the Slope, and come within a Foot of the Surface; then lay another Bed of Earth upon this, and continue the same to the Top.

THE best Fascines and Hurdles are those made of green Wood, as the Branches and Boughs of Willow, because easily taking Root, they fasten themselves the better in the Ground. It is good to leave their Roots, where they are not troublesome, for that they may be of use to maintain the Band. Over this Wattled-Work, you lay the Turf, after covering it with a little Earth.

FOR the Proportion of Banks, they usually give them Two Thirds of their Height, that they be not too steep; and sometimes but a Half, or a Third of it, especially in little ones. Some make the Base of their Slopes equal to their Height, others lay them with a Line below the Diagonal of the Square, because the Moisture falling always downwards, the Top becomes dry in Summer, which makes the Grass wither and die away.

THE Nature of the Ground, upon which you raise these Banks of Turf, should also be considered; for, if the Earth be of a strong Body, and of a binding Quality, it will almost support itself, and the Allowance of six Inches to a Foot in Height, will be enough to keep the Bank up very well;

well; whereas, if the Earth be loose and gravelly, nine Inches to a Foot is the least you can give it.

As to Terrass-Walls, you should, before you build them, consult the natural Bottom of the Soil; for the Masonry should be set upon firm Ground, and a good Earth. In Ground that is sandy, loose, and boggy, they make use of Gratings of Timber-Work, Flooring-Pieces, Plates, and Piles, upon which they secure the Foundations of the Walls.

THE Diminution and Battering of Walls, should be in proportion to their Height, because of the Thrust of the Ground. For very high Walls, you may make them batter a fifth or sixth Part of their Height, that is to say, two Inches in a Foot; for Walls from 12 to 15 Foot high, a Ninth Part; and from 15 to 20 Foot high, an Eighth Part; for low Walls of six or seven Foot high, a Twelfth Part; and so of others: Their Thickness also should bear proportion to their Height, and the Nature of the Ground.

TO come now to Stairs; You should always place them as advantageously as possible, as at the lower End of the Walk of a Parterre, or facing some of the principal Lines, and never in Obscure and By-places. They are ordinarily built with Steps of Masonry, but may be made of Grass, which, when well kept, are very agreeable to the Sight, and these the *French* call * *Estrades*.

YOU should observe to make your Stairs of very easy Ascent, and the Steps as few as possible: Their Number should be unequal, and should never exceed 11 or 13 in a Flight, without a Half-Pace, or Rest of two Paces broad, and as long as the Going of the Stairs. Each Step may have 15 or 16 Inches Tread, to five or six Inches Rise, or Height, including a quarter of an Inch Fall, which each Step ought to have for carrying off the Water, that otherwise would rot the Joints, where one Step is set upon the other.

GENTLE Ascents without Steps, should be taken as far as conveniently may be; to avoid too great a Steepness, they are generally supported by Terrass-Walls, or Slopes of Turf; and to hinder the Torrents of Wet from spoiling them.

* Estrade *comes from the* Latin, Stratum, *a Bed. 'Tis properly the Rise, or Step, on which the Bed is set in an Alcove, or the Throne in great Apartments, and answers to the* Sofa *in the Eastern Divans, or Halls of Audience.*

them, there are Checks of Grafs, or Wood, laid at certain Diftances, to turn the Water off to the Sides.

THE two following Plates afford Examples of all forts of Stairs proper for Gardens: The firft of thefe Plates contains four Afcents of Stairs, that are executed in the Royal Palaces; the Ornament and Beauty of which, may be confulted on the Place. I have given the Plan, and upright Elevation of each, with the Scale, that you may judge of their Proportion.

THE firft Figure is the great Stairs in the Garden of Monfieur the Duke of *Orleans* at S. *Cloud*, which leads from the Caftle to the Cafcades.

THE fecond Figure is the little Stair in the Garden of *Luxembourg* at *Paris*; the Plan of which is very ingeniouffly difpofed; it is fituated in the middle of the Terraffes, over-againft the Bafon.

THE third and fourth Figures repreffent two Stairs of the Garden of the *Tuileries* at *Paris*. The biggeft is feated at the End of the Garden, as you go down from the long Terrafs by the River-fide, to the great Octangular Bafon; and the leffer is upon the Terrafs, by the Side of the Riding-houfe.

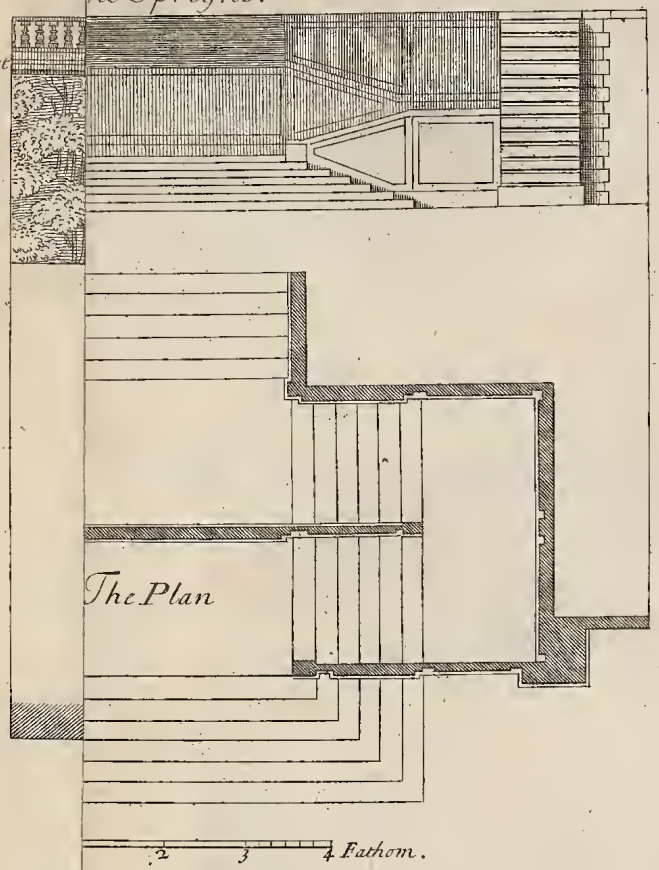
THE fecond Plate contains feven feveral Stairs. The great one differs from the others, in that you go up at each End of it; as you fee by its Plan and Elevation, *Fig.* 1. At three or four Steps high, you have Half-Paces, and a Flight, that leads you to the Terrafs above. The Compofition of it is particular enough; and tho' adorned with plain Pannels only, is yet enriched in the Middle, with a fine Bafs-Relievo, and Ruftick-Work: This Stair is proper only for a Place, where the Middle is taken up by a Parterre, or fuch like Work, and where the Alleys lie upon the Sides that anfwer the two Afcents.

IN the fecond and third Figures, are two Stairs at the Corner of a Terrafs; one is of an octangular Form, and the other a perfect Square: They are fuppofed to be upon the Point of a Wood, with a Seat placed where the Angle is chamfered off, and two Terrafs-Walks that meet and make the Corner. Thefe Stairs have a Defcent facing each Walk,

together

Firs in ye Garden of ye Tuilleries.

fig: 1st. The Upright.



Garden of ye Tuilleries.

fig: 2d. The Upright.

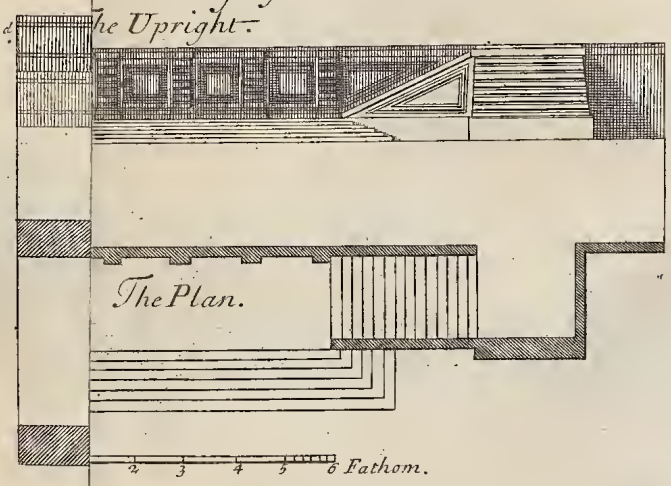


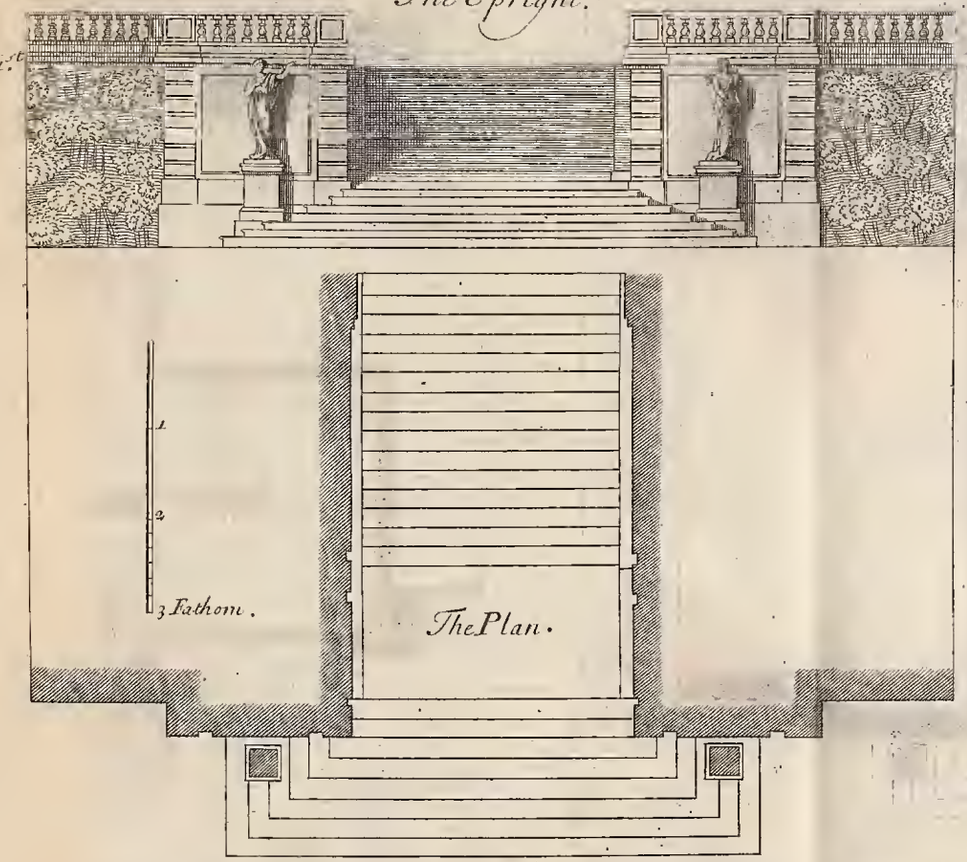
Plate 1st. H Pag.

M. Ivdr Gucht Scul.

The great Stairs in ye Garden of St Cloud.

The Upright.

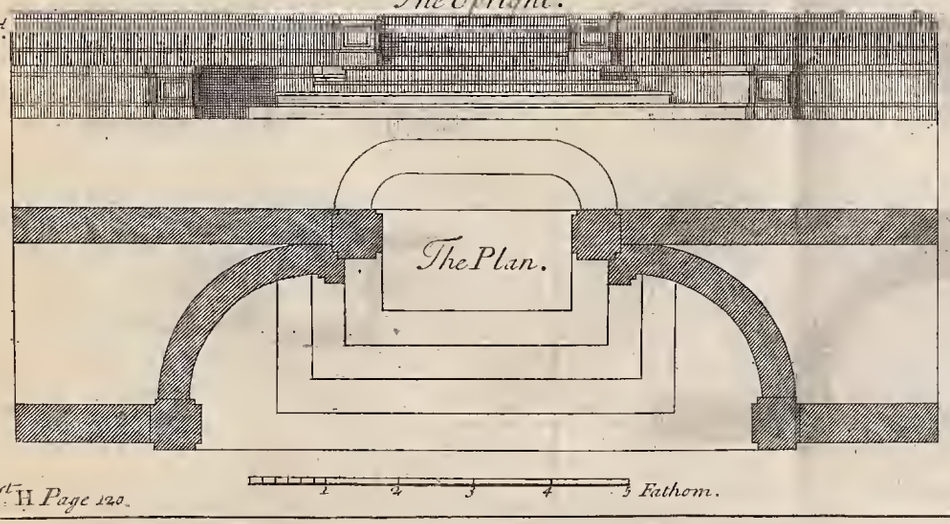
fig: 1st



Stairs of ye Garden at Luxembourg.

The Upright.

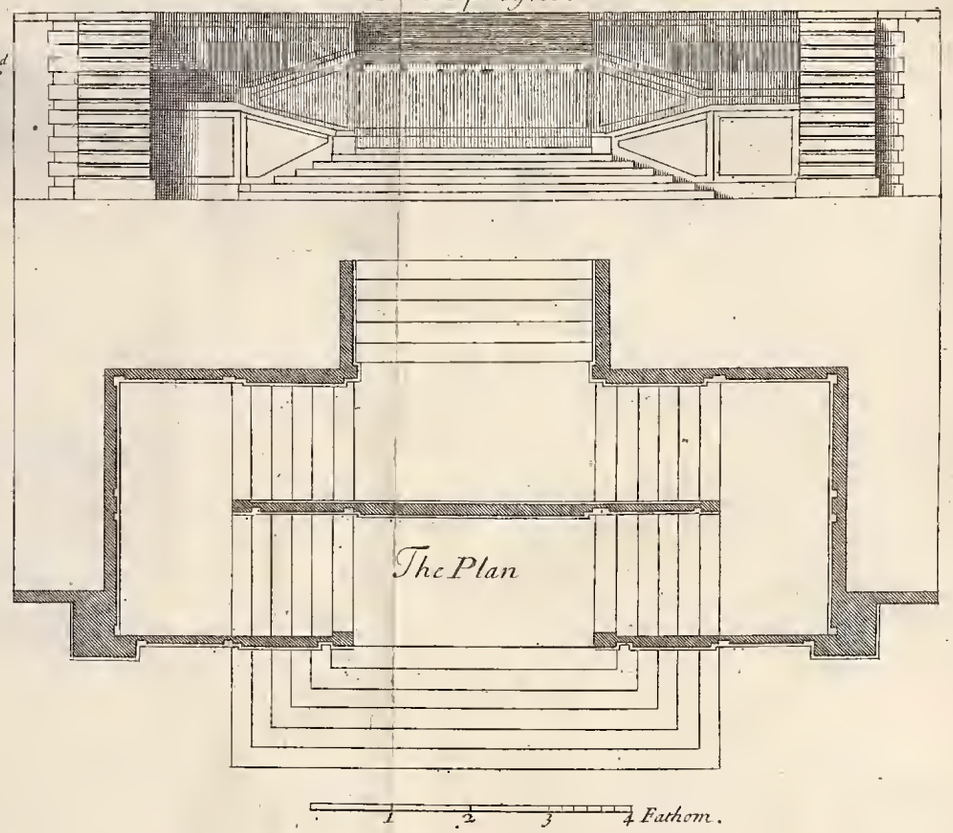
fig: 2d



The great Stairs in ye Garden of ye Tuilleries.

The Upright.

fig: 3d



Lesser Stairs in ye Garden of ye Tuilleries.

The Upright.

fig: 4th

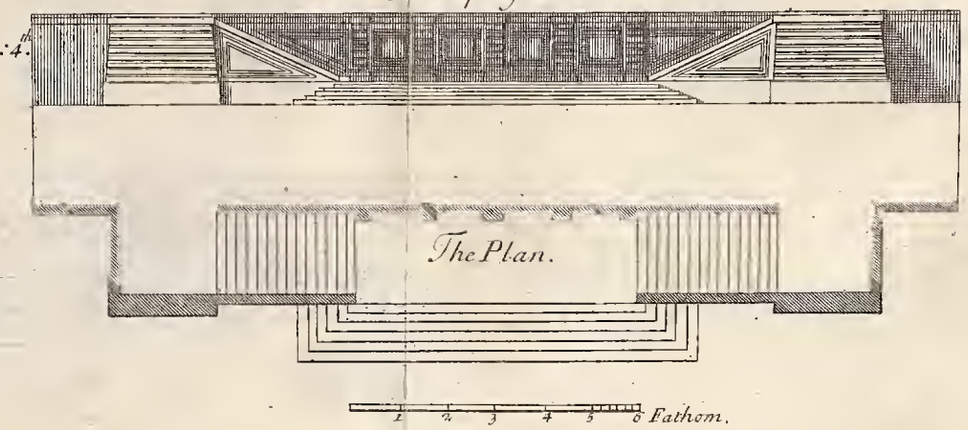
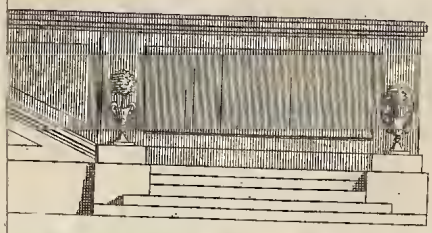


Plate 1st H Page 120.

M. Ldr Gucht Scul.



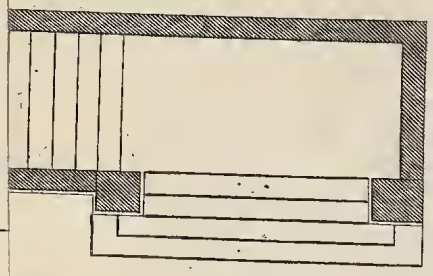
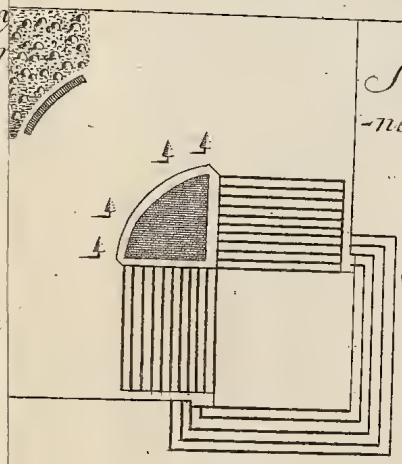


fig:

Stairs at y of a Terr

fig: 2d.



Stairs at y Cor-
-ner of a Terrass.

fig: 3d.

Stairs in y

all Stairs going down from a Wood.

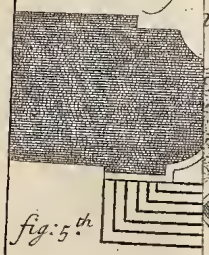


fig: 5th.

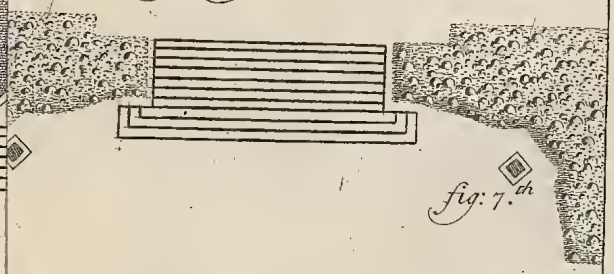
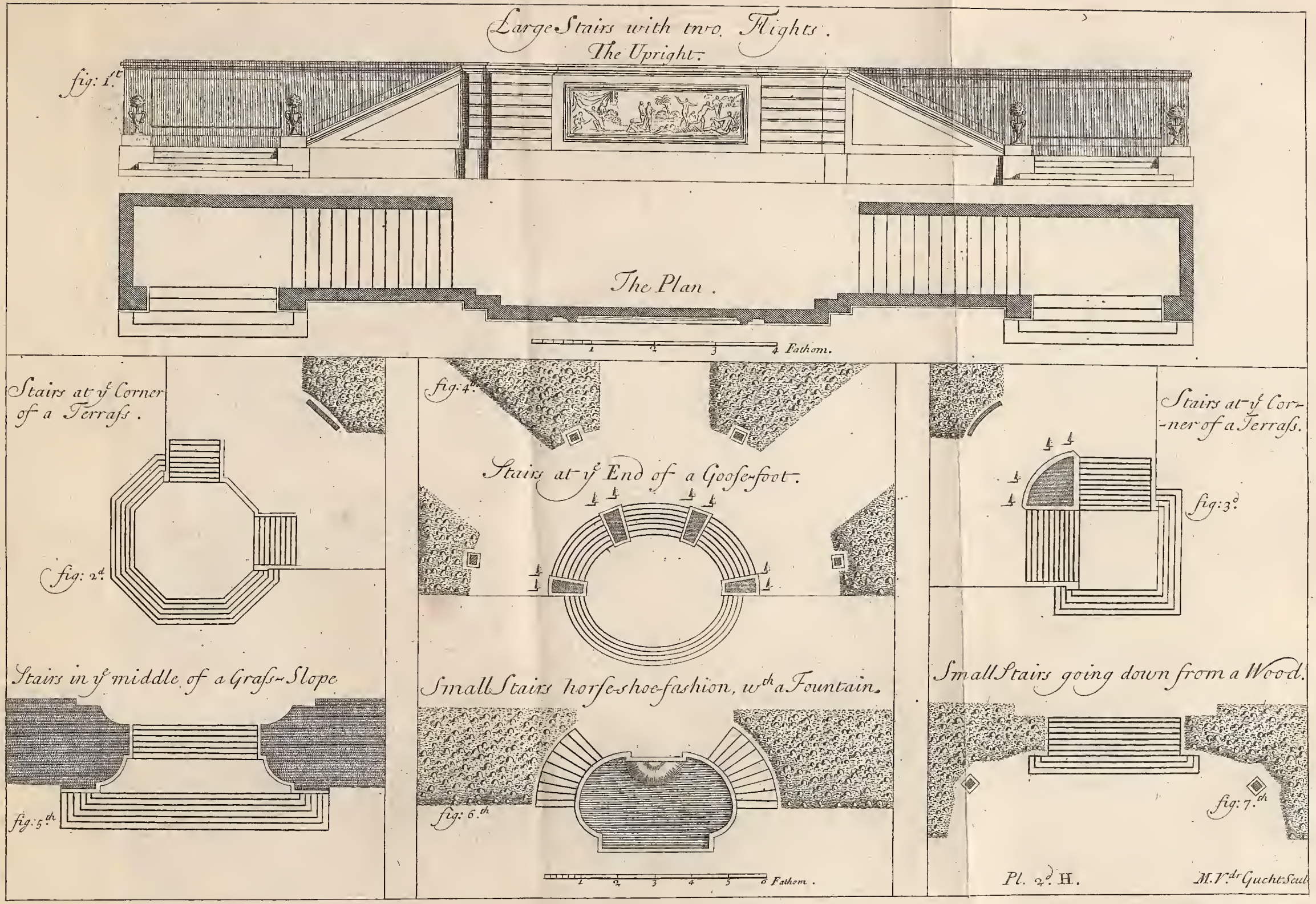


fig: 7th.

Pl. 2d. H.

M. V.dr Gucht Scul.


Large Stairs with two Flights.
The Upright.
fig: 1st
The Plan.
1 2 3 4 Fathom.
Stairs at ye Corner of a Terrass.
fig: 2d
Stairs in ye middle of a Grass-Slope
fig: 5th
fig: 4th
Stairs at ye End of a Goose-foot.
Small Stairs horse-shoe-fashion, wth a Fountain.
fig: 6th
1 2 3 4 5 6 Fathom.
Stairs at ye Corner of a Terrass.
fig: 3d
Small Stairs going down from a Wood.
fig: 7th
Pl. 2d. H.
M.V.dr Gucht Scul.

together with a large Half-Pace and Steps that lead to the Bottom.

IN the fourth Figure, you ſee a Stair of a very ſingular Contrivance, which is proper at the End of a Gooſe-foot cut in a Wood; its Form is Oval; and fronting each Walk, there are Deſcents, with ſmall Banks of Graſs betwixt, lined with Tablets of Stone, which interrupt the Flight; and above are Yews planted regularly, for Ornament. Theſe three Deſcents bring you upon a large Oval Half-Pace; from whence, by other circular Steps, you go down to the Gardens below.

IN the three following Figures, are little Stairs that are very plain; one of which is contrived for the middle of a Bank of Turf, *Fig.* 5. the other is a Stair Horſeſhoe-faſhion, *Fig.* 6. with a Fountain between the two Flights; the whole accompanied with a Wood, from which it makes a Deſcent, as is alſo the little Stair repreſented in *Fig.* 7.

CHAP.

CHAP. IV.

Of the Manner of tracing out all Sorts of Designs upon the Ground.

'TIS not enough to have given all the foregoing Practices for the Instruction of Gardeners; for though they are good in themselves, and very easy in the Execution, nevertheless, being but Things detached and separate, it may be objected, that there is still a farther Difficulty to tack them together, so as to make one Piece; I mean, that it would be Matter of fresh trouble and Perplexity, to trace out the general Disposition of a Garden. This, therefore, has inclined me to deliver in this Place the Manner of tracing out a general Plan, where all the several Parts that compose a fine Garden are supposed to occur; and by this I hope to give the last Perfection to this Work, and make any one capable to trace and execute upon the Ground, the most difficult Designs that are.

I SUPPOSE, in the first place, that this Person has consider'd and understood all the short Practices in the first Chapter of this second Part, and that he has tried and drawn them out one after another upon the Ground. I come now to shew him the Way to make a general Application of all these distinct Parts, and to put them in Practice in the general Disposition of a Garden, as may be seen in the following Plate.

THE Ground being dress'd, and every way prepared for tracing, as has been taught in the first Chapters of this second Part, and the Design and Disposition of the Garden also resolved on, I shall suppose the Building and Walls that

that inclose the Ground to be complete and finished, it not being my Purpose to treat of Architecture.

THE Example I here propose, is the general Disposition of a Garden, where there are Parterres, Groves, Bowling-greens, *&c.* and in a word, all that can make up a handsome Garden, as is here shewn in this Plate, where the Plan is supposed to be designed upon a Roll of Paper, *Fig.* 1.

THE second *Fig.* by the Side of it, where the plain Tracks are marked, represents the Ground, and what ought to be done in order to draw upon it, and describe to a Truth the several Parts of the small Plan, that is to say, to place them right, and give them their just Dimensions.

'TIS to be observed, that in order to strike out all the Parts and Dimensions of this Plan to an Exactness upon the Ground, you must precisely follow those you find with the Compasses upon the Scale, at the Bottom of this Roll of Paper, as has been already mention'd in the first Chapter of this Part.

WHEN you read in the following Practices, *according to the 4th, 5th, or 6th Practice,* you are to understand the Practices that are in the first Chapter of this Part, and not those that are in the 2d and 3d Chapters aforegoing.

TO proceed to the Practice of tracing this general Plan upon the Ground, you begin with prolonging the Front of the Building *A*, *Fig.* 2. by Stakes set on each Side at proper Distances, in the Range of the Building, as the Line *B B*, according to the third Practice. Measure, with the Compasses upon the Scale of the Plan, how many Fathom there are from the Fabrick *A* to the Parterre *C*, and you'll find this Cross-Walk is five Fathom wide; set this Measure off, by the Fathom upon the Ground, from the Foot of the Building, and drive a Stake at the End of it, as at *D*. Then find the Middle of the Front of the Building *A*, and fix a Pole before it, as *E*; and measuring, in like manner, the Middle of the other Front on the Court-side, fix another Pole there, as *E*, in a Line one with another across the Vestibule. This done, set the Semi-circle as was mention'd before, upon the Place of the Stake *D*, so that the Sights of the

Base cut the two Poles *EE*; and prolong, by Stakes, also the middle Line *GG*; then turning yourself about to a Square, and setting the Alhidade upon 90 Degrees, according to the fifth Practice, range several Stakes from one End to the other, which shall give the Line *FF*. Measure again, upon the Plan, what Length the Parterre *C* ought to have, which is 18 Fathom; take also half the Breadth of the great Cross-Walk *HH*, which being five Fathom wide, will be two Fathom and a half; this added to 18, the Length of the Parterre *C* makes in all twenty Fathom and a half. Measure out this Length by the Fathom upon the Middle Line *GG*, beginning at *D*, where the Instrument was first set; and having fixed a Point at 20 Fathom and a half beyond it, as in *I*, drive a Stake there; and from this, which is called the Center-Point, you are to set out all your principal Lines, chief Walks, and Circles about the Bason, as also the Bason itself. Remove the Instrument again from *D* to the Center *I*, over which set it very plum, and let the Base cut the two Poles *EE* which are next the Building, and the Stakes upon the middle Line *GG*, and plant divers Stakes in the same Line beyond, to the very End of the Garden, as far as *K*; then setting the Alhidade of the Instrument upon 90 Degrees, turning yourself square for the Cross-Walk *HH*, and drive Stakes in the Line of it from End to End. These Ranges give you the Middle Lines of your great Walks, and setting off at both Ends two Fathom and a half on each Side of these Middle Lines, drive Stakes there, and by them plant others, by which means your Walks will be five Fathom wide, according to the Plan.

THIS being done, take away the Instrument, and in the Center *I* fix a Pole, which you may set a little deeper into Ground, in the Place where the Stake was; measure, with the Compasses, upon the Plan, the Diameter of the Bason, which is six Fathom; and taking a Cord of three Fathom long, which is the half Diameter, make a Loop about the Pole *I*, and trace the Circle, according to the seventeenth Practice. After which, from the same Center *I*, trace out the Walk *L*, which compasses the lower Part of the Bason, and makes the circular Part of the Parterre *C*; and

and lengthening the ſame Cord, ſtrike out the Walk about the upper Part of it, which forms the Half-Moon *M M*; terminate this Half-Moon where it meets the Walks, by Stakes ſet in the Range of the Walks, and in the Track of the Circle, which will mark out the four Corners *O O O O*. Then take upon the Plan the Breadth of the Piece of Parterre *C*, which is ten Fathom, and ſetting five Fathom on each Side the middle Line *G G*, trace out theſe two Lines by the firſt Practice, which; with that below, *F D F*, and the circular Portion *L*, incloſe and border the Place deſigned for the Parterre *C*. From this Track you afterwards ſet out the Breadth of the two Walks *P P*, which have three Fathom and a half each, ranging the Stakes of theſe Walks with thoſe of the lower Corners of the Half-Moon *O O*; and where they meet the two Croſs-Walks *H H* and *F F*, plant Stakes at the Corners, which will include the Groves *Q Q*.

FOR terminating your great Walks, meaſure upon the Plan what Length the Walk fronting the Building ought to have, from the Half-Moon *M M*, which ſuppoſe 30 Fathom: Meaſure out this Length with the Fathom, from the Corners of the Half-Moon *O O*, and at the End of it drive a Stake, as *K*, where place the Semi-circle, and direct its Baſe upon the middle Line, and the Stakes and Poles *I G G E E*, and turning yourſelf ſquare, ſet out Stakes on each Side, the whole Breadth, which gives the Square Line *R R*; meaſure again, next the Building *A*, the Length of the Croſs-Walk *F F*, from the middle Line drawn upon the Plan, which is here found to be 26 Fathom on a Side; and from the middle Line or Pole *E*, meaſure each way, upon the Ground, 26 Fathom. Then go to the other End, and from the Stake *K*, meaſure likewiſe, upon the Line *R R*, 26 Fathom on each Side, and terminate theſe Lengths by Stakes, planting ſeveral others upon the Length of the two Sides, which will give the Lines *S S*, and *T T*, and terminate and incloſe the Squares deſigned for the Groves *Q Q*, the Wood *V*, and the Bowling-green *X*, the Corners of all which ſhould be mark'd out with Stakes. After this, the Walks about the Walls are eaſily ſet out, meaſuring by the

Fathom, from both Ends of the Lines *R R*, *S S*, and *T T*, to which they are parallel, the Breadth they are found to have in the Plan. As to the two Squares of Kitchen-Ground *Z Z*, which are upon the Sides of the Court, it is needless to say, that for tracing them, you have no more to do than to prolong the Lines *S S*, *T T*, &c. for their Length; and for their Breadth, set off from the Cross-Line *B B*, the Number of Fathoms they are found to have by the Plan, and you have the Squares without farther Trouble.

FIRST OBSERVATION.

THO' the Plan I have here given for an Example be of a square Figure, nevertheless, if you had a Garden to set out that was beveling or oblique, you would meet with no farther Difficulty in it, than to open the Semi-circle, and to set it upon the same Degree shewn by the Protractor, in taking the Openings of the Angles upon the Paper.

SECOND OBSERVATION.

AFTER you have entirely set out your Garden, the useless Stakes and Spikes must all be taken away, as serving only to puzzle and perplex you, and let such only remain as are necessary: For Example, in the Groves *Q Q*, *Fig.* 2. you need only leave the four Stakes at the Corners.

THIS is the best and most expeditious Method that I know of setting out a Garden, finding first of all the principal Rows, and middle Lines, and setting out in gross all the different Parts marked upon the Plan. Nothing now remains, but to shew the Method of describing the Inner-Part of these Works, which is contain'd in the three following Practices; the first teaches to trace out a Parterre; the second, a Grove; and the third, a Bowling-green, which are three principal Parts of a Garden, and the most difficult to execute. I have taken the Designs from those inserted in the general Plan, described upon Paper, *Fig.* 1. as the Parterre *C*, the large Grove *V*, and the Bowling-green *X*, and have enlarged them considerably in this Plate, where I always represent them as design'd upon Rolls of Paper, with the

The general [illegible] mark'd out upon y^e Ground.

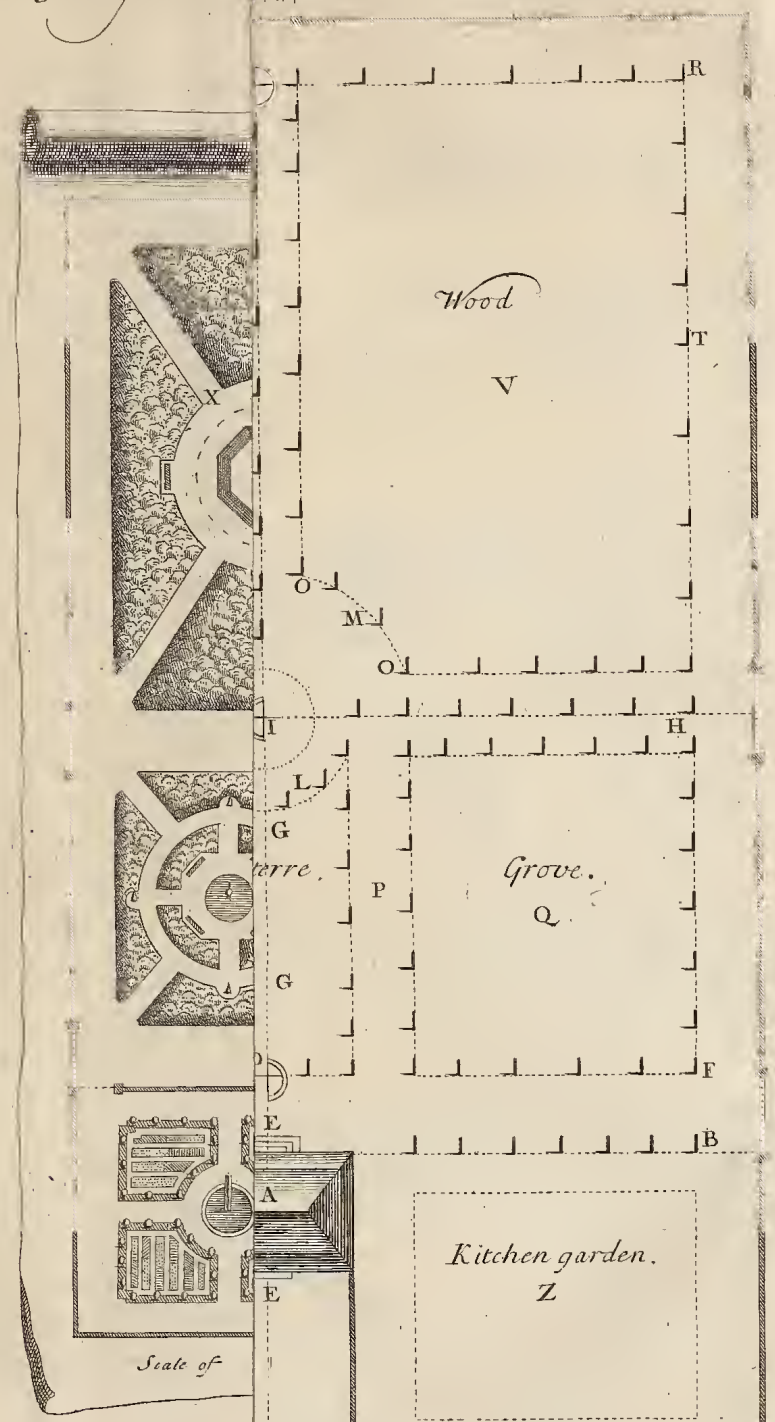
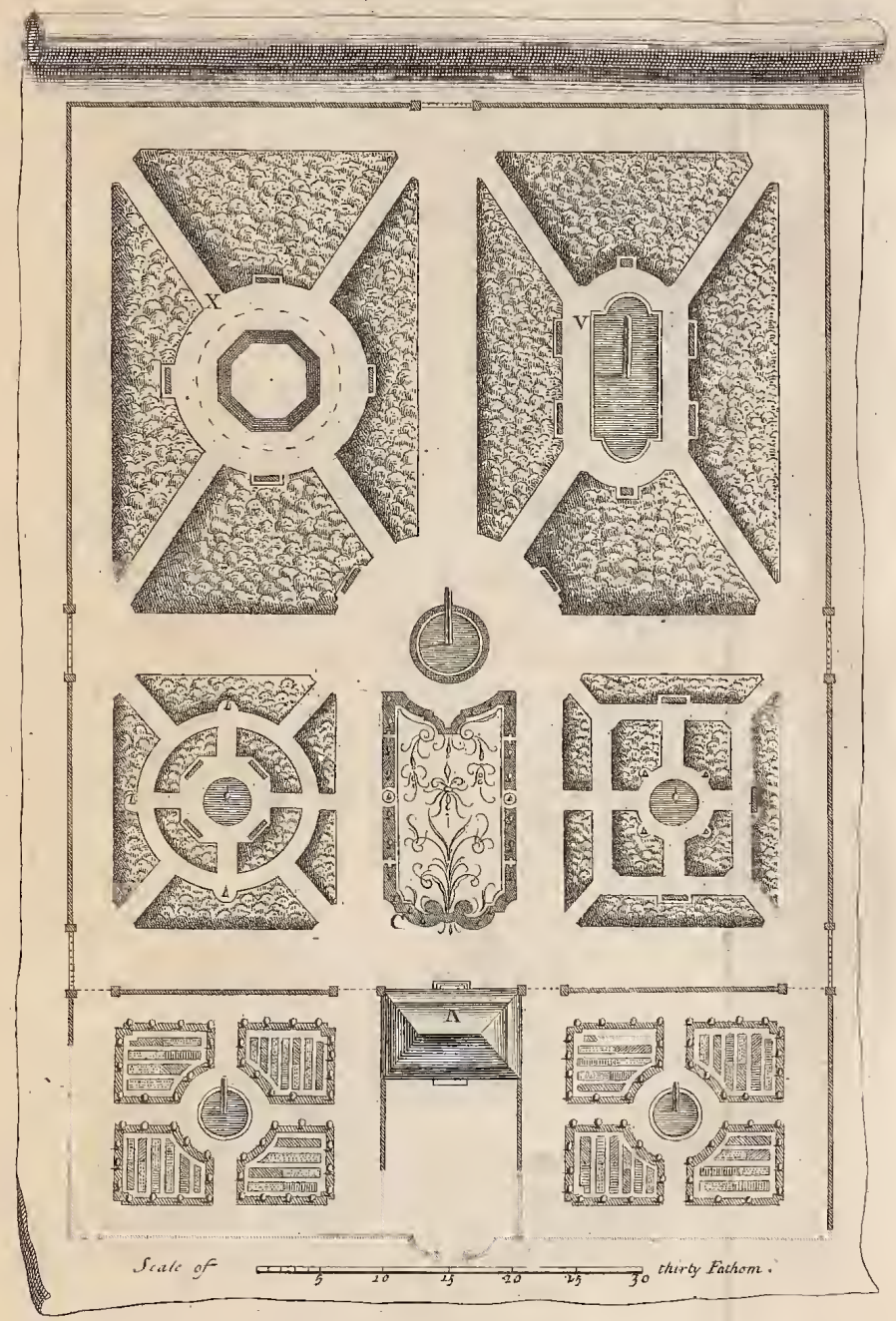


Plate I. Page 124.

M. V^dr Gucht Scu

The general Plan of a Garden drawn upon paper.

fig: 1st



The same Plan of Garden mark'd out upon y^e Ground.

fig: 2d

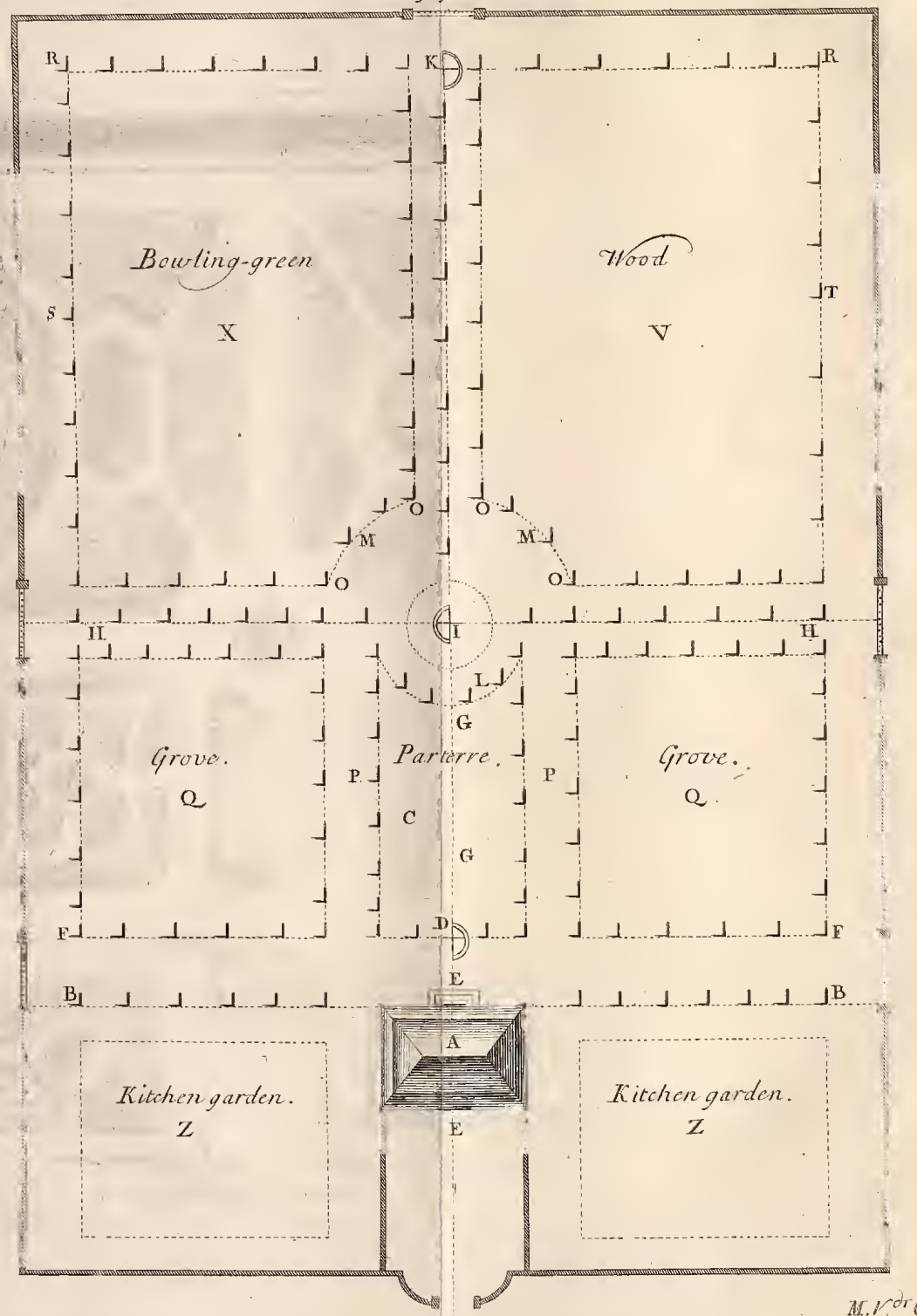


Plate I. Page 124.

M. V^dr Gucht Scu

the Practice of tracing them out upon the Ground, by the Side of them.

THE FIRST PRACTICE.

THE Place being very ſmooth and well prepared, according to what has been ſaid before in the ſecond Chapter of this Part, you muſt divide the Paper which contains the Deſign of the Parterre *C*, *Fig.* 1. with Lines of Black-Lead croſſing one another, ſo as to cover it with ſmall Squares of about three Foot every way, by the Scale of the Plan. You need not trouble yourſelf, if half or a quarter of a Square remain at the End of the Diviſion, becauſe the ſame will remain upon the Ground. To perform this well, the Parterre muſt firſt be drawn, as in *Fig.* 1. that is, the Leaves and Branch-work muſt be delineated with a ſingle Stroke on one Side, as *A*, and with double Strokes on the other, as *B*, which will help you the better to apprehend the Out-Line and Riſe of every Leaf, becauſe not being doubled, its chief Stroke is more diſtinct, and may be traced out more exactly upon the Ground. Then go upon the Place deſign'd for the Parterre, *Fig.* 2. and taking a Meaſure of three Foot long, divide the Lines that bound it into equal Parts of three Foot each, as well lengthwiſe as breadthwiſe, and obſerve to make as many Diviſions as are marked upon the Plan, *Fig.* 1. ſet Spikes at each Diviſion, as you ſee *Fig.* 2. and ſtraining Lines from Spike to Spike the whole Length and Breadth, trace theſe Lines all over it, which will divide the Place into Squares, and give you the ſame Number of them upon the Ground, as you have upon the Paper. Then take the Deſign of the Parterre *C*, *Fig.* 1. which you muſt always have near you to reckon the Chequers, and to look upon the Contour and graceful Turn of the Leaves. Begin at one End, 'tis no Matter which; ſuppoſe at *A*, and reckon in what Square or Chequer ſuch a Stroke, or ſuch a Leaf is: For Inſtance, the Leaf *D* is in the third Square lengthwiſe, and the firſt of the Row; reckon upon the Ground, beginning at *A*, *Fig.* 2. the third Square lengthwiſe, and the firſt breadthwiſe, as you ſee at *D*. Firſt draw this Leaf with the

the Tracing-Staff with a ſingle Stroke, and conſider it very carefully, minding where it takes its Riſe, and where it terminates, whether in the Middle, or at two Thirds of the Square; and ſo of the other Leaves and Branch-work of the whole Parterre. You may deface, with the Rake, the Faults you make at firſt, in placing a Leaf wrong, that is, out of its proper Square, or in not giving it the handſome Out-Line required by the Deſign. After you have thus traced out the two Sides of the Parterre with a ſingle Stroke, and have given all the Leaves and Ornaments their due Place, you muſt then make the double Strokes, and part and raffle the Leaves, as you ſee in the other half of the Parterre *B*, which is drawn complete, *Fig.* 1. You are likewiſe to reckon in what Square theſe double Strokes are, and to ſet off the leſſer Meaſures of them with the Fathom and the Foot, that they may be drawn more exact than they can be at Sight only. You may hollow the Track a little for fear it ſhould be defaced; and by Holes made with the Point of the Tracing-Stick, determine the End and Springing of the Leaves and Branches, for the Eaſe of the Planters.

OBSERVATION.

THE leſs the Squares are, the nearer you will come up to the Beauty of the Deſign, and the more exact will the Draught be upon the Ground. They are uſually kept to three Foot ſquare in ſmall Parterres; and in great ones they ſometimes make them four Foot. You need include in theſe Squares, nothing but the Volutes and Twiſting Borders at the Ends; for as for them upon the Sides, they are ſet out by the Range, meaſured with the Fathom, and traced out by the Line.

THE SECOND PRACTICE.

THE Out-Lines of the Grove *V*, *Fig.* 3. being traced out upon the Ground, and the Corners *A B C D* determin'd by Stakes; for ſetting out the two Walks, call'd Diagonals, *A D* and *C B*, from the angular Stakes *A B C D*, *Fig.* 4. plant a ſtrait Row of Stakes the whole Length each way, from

from Corner to Corner, which will give you the middle Lines of your Walks; and in the Place where they intersect one another, as at *G*, fix a Pole, which shall be the middle Point; then measure the Breadth of these Walks upon the Plan, suppose two Fathom, and at both Ends set off one Fathom each way from the middle Line, and set Stakes there for ranging the Sides of your Walks. After which, measure with the Fathom the two Breadths of the Wood *A B* and *C D*, and the two Lengths *A C* and *B D*, beginning from the Corner Stakes, and mark the exact Middles above and below, by the Stakes *E E* and *F F*, and prolong these Lines by other Stakes, the whole Length and Breadth. As for the Hall in the Middle, which is a long Square or Parallelogram, measure upon the Plan, *Fig.* 3. how many Fathom there are from the Middle-Point of the Bason to the Center of the circular Segments, which Length you'll find by the Scale to be five Fathom: Set off upon the Ground, *Fig.* 4. on the Line *E E*, and from the Middle-Point *G*, five Fathom on each Side, and drive Spikes there, as *H* and *I*, which shall be the two Centers for all your circular Parts. Set the Semi-circle exactly over one of these, as *H*, and directing the Base to answer the Line *E G E*, set the Alhidade or Moveable-Index upon 90 Degrees, to return your Square, and to set out the Line *K K*; upon which, from the Spike *H*, measure on each Side half the Breadth of the Bason, which is two Fathom and a half, where you are to stick Spikes from which to set off the Breadth of the Walks about the Bason, which, according to the Plan, is likewise two Fathom and a half. You then move the Semi-circle to the other End, as to the Center *I*, for raising the square Line *L L*, upon which you carry the same Measures, as you did before upon the Line *K K*, and set off beyond it, from the Line *L D*, the Breadth of the End-Walks, which is two Fathom and a half, for drawing the Line *M M*, and do the same Thing from the Line *K K*, for drawing at that End the Line *N N*. Range all these Lines from one End to the other, and trace them out by straining the Cord from Spike to Spike, and terminating them by the Ranging-Stakes upon the Sides of the two Diagonal-Walks *A D* and *C B*. This

done,

done, take a Cord, and making a Loop about the Stake *H*, draw the circular Part *O* according to the Diameter found by the Plan, and ſtop your tracing Stroke where you meet the Line *K K*, ſetting Spikes there, which form the Returns of the Baſon: Then upon the middle Line *E E*, ſet from the circular Track *O*, the Breadth of the Walk that incloſes it, which is two Fathom and a half; ſtick a Spike there, and extending the Cord to this Length, from the ſame Center *H* ſtrike the circular Part of the Hall *P*, till you meet the ſtroke of the Line *N N*, where you ſhould alſo ſet Spikes, to note the Returns of the Hall. Do the like at the other End, moving the Cord with the ſame Length to the Center *I*, for ſtriking out the circular Parts *Q* and *R*, which form the other Returns of the Hall. To complete the drawing of the Sinkings and Niches for the Seats and Figures, you may make Uſe of a wooden Square to ſet out their ſhort Returns, ſtill following the Meaſures quoted in the Plan.

OBSERVATION.

IN ſtriking out Baſons or Graſs-plots that have Sweeps at the Ends, raiſe the Center an Inch or two, this always looks well in Work; and ſo it does to make the Breaks but ſmall, they being very diſagreeable to the Eye when they are too big.

THE THIRD PRACTICE.

To ſtrike out a Bowling-green upon the Ground.

THE Bowling-green marked *X* upon the Plan, *Fig.* 5. being ſtruck out in its octangular Form upon the Surface of the Ground, according to the ſixteenth Practice, I ſhall forbear ſaying any more here, than to ſhew the Method of Sinking it. Plant Stakes at the eight Angles of the Octogone, *Fig.* 6. ſo that they may all ſtand of equal Height about the Superficies of the Ground, as a Foot high, ſuppoſing the Surface dreſſed to an exact Level. Take Notice what Length the Banks ought to have; ſuppoſe, for Inſtance,

ſix

ſix Foot, and drive ſeveral Spikes at Random-ſeven or eight Foot within the Corner Stakes, which will be of Uſe to direct the Hollowing away of the Earth round about, without taking it away towards the Edges, which ſhould be preſerved for cutting the Banks in the ſolid Ground; this is expreſs'd by the Winding-Line *aaaa.* Your Earth being cleared out of the Middle, as has been already taught in the ſecond Chapter; to level and make eaven the Bottom of the Bowling-green, adjuſt the inner Stakes, that their Heads may range exactly, and be of equal Height with thoſe of the eight Corner Stakes, as you ſee by the Stakes *BCDEFG*; then meaſure downwards upon theſe inner Stakes, the one Foot Height which the Corner Stakes are above the Ground, and add to it, likewiſe, the Depth or Sinking you would give the Bowling-green; ſuppoſe two Foot, this makes in all three Foot, which muſt be reckoned downwards upon the Stakes, and all them reduced to this Height, by earthing up or clearing away the Ground from the Foot of them. You then ſtrain a Line from one to another, and, by Patterns or Furrows, level all the Bottom of the Bowling-green, according to the ſecond Practice of the ſecond Chapter. This done, take away all the Stakes, and drive others in the Bottom oppoſite to the Angles, at eight or ten Foot Diſtance, ſo as to range, and be of equal Height with the Corner Stakes. Then upon one of the Corner-Stakes, as *H*, faſten a Line level with the Ground, and having taken off one Foot downwards upon the Stake *K* that anſwers it, tie the other End of the Line faſt there, and ſtraining it tight, meaſure upon it the ſix Foot the Bank ſhould have, and let fall a Plum-Line to the Bottom, ſetting a Spike exactly in the Place. Do the ſame Work at the ſeven other Angles of the Bowling-green, and having thus found and terminated by Spikes the eight Angles at Bottom, ſtrain the Line from one to another, and deſcribe upon it the ſecond Octogone. As to the Manner of cutting and making the Banks of this Bowling-green, you may have Recourſe to what has been already ſaid in the fourth Practice, and in the Remarks upon the foregoing Chapter.

WHEN these three Practices are well understood, and you have traced upon the Ground this Parterre, Grove, and Bowling-green, you will be able to do a great Number of them with Ease; for tho' their Designs may be different, they may all be referred to the same Method. Thus, a Gardener who has a Parterre or a Grove to set out, has no more to do than to consult the Practice of tracing a Parterre, or Grove, *&c.* and in following precisely what is there taught, he will easily obtain his End.

I SHALL say nothing here of setting out a Kitchen-Garden, a Grove in Quincunce, a Parterre after the *English* Manner, *&c.* these Sorts of Designs being very easy to describe, when you have well practised what has been just now taught, upon the Subject of such as are much more composed, and consequently more difficult to trace out upon the Ground.

YOU must observe, that in Lines and Ranges of great Length, it is much more exact to measure at both Ends, than in the Middle only.

WHEN upon the Ground you meet with any Error between your Work, and the Plan upon the Paper, which often happens, you must prove and examine all the Measures one after another, to find out where the Mistake lies; and if you cannot discover it, and the Error be but inconsiderable, divide it into two; it will never be perceived upon the Ground, and you can't be so circumspect, but some petty Mistakes will happen.

IF any Difficulty arises in the Practices before mention'd, as to the Use of the Semi-circle, Fathom, Line, or the like, you may have Recourse to the three foregoing Chapters.

CHAP.

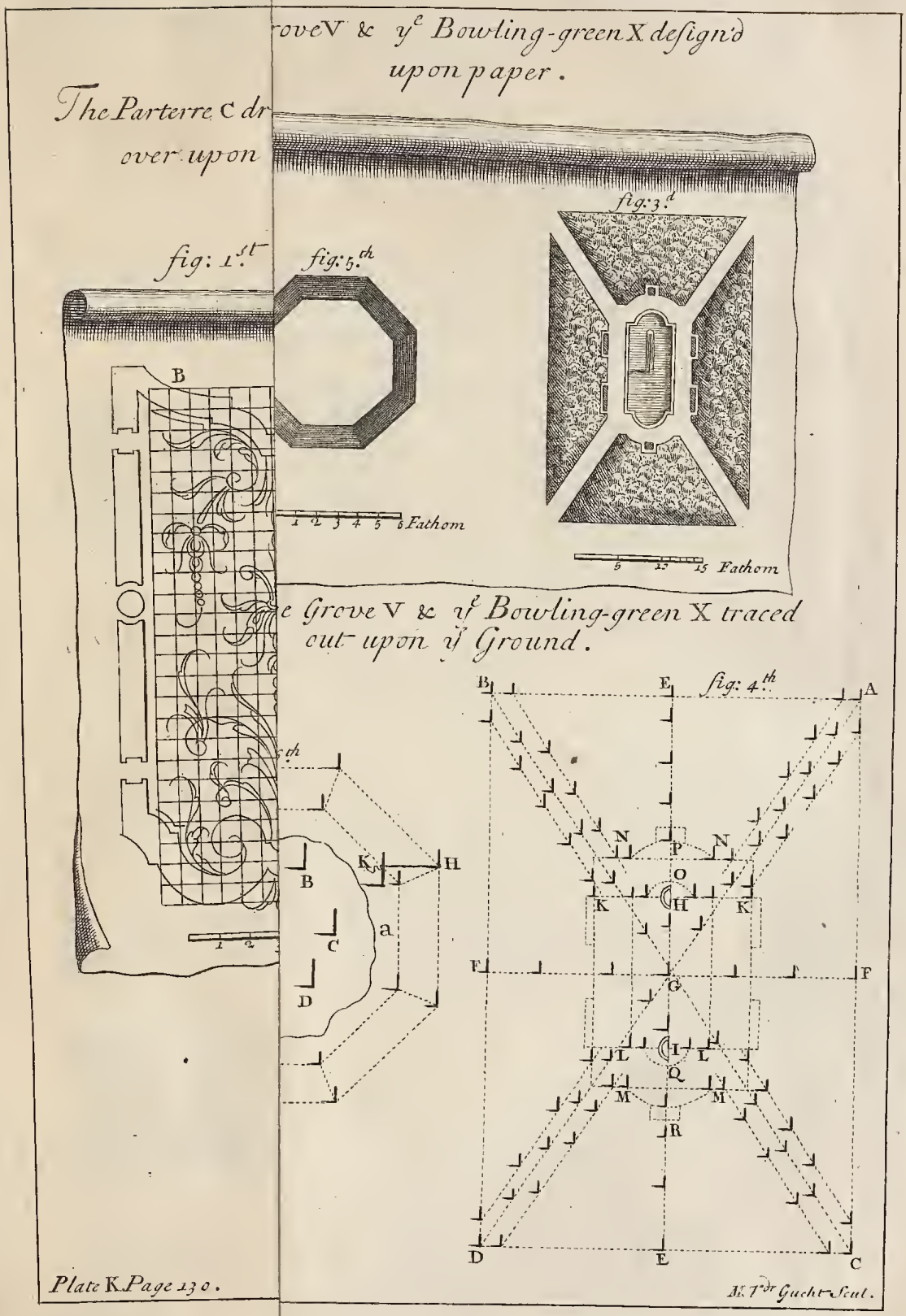

rove V & y^e Bowling-green X design'd upon paper.
The Parterre C dr over upon
fig: 1.st
fig: 5.th
fig: 3.d
B
1 2 3 4 5 6 Fathom
5 10 15 Fathom
e Grove V & y^e Bowling-green X traced out upon y^e Ground.
fig: 4.th
B
E
A
N
P
N
O
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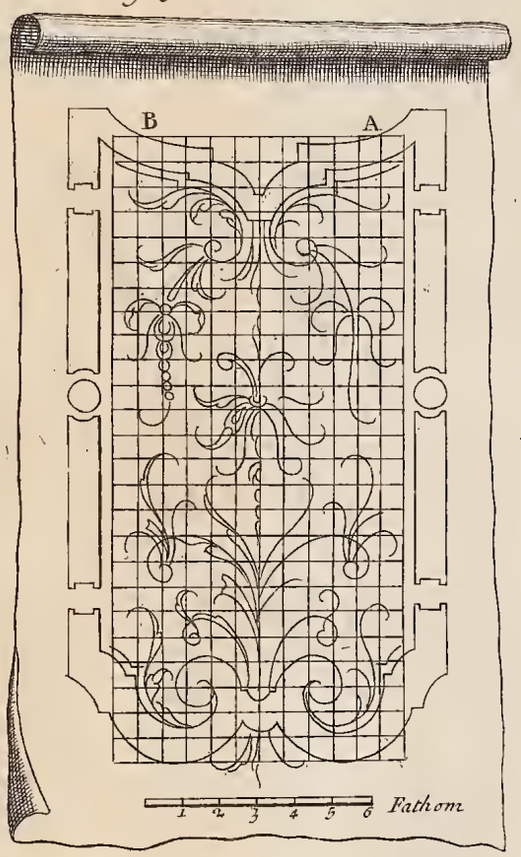
Plate K. Page 130.
M. T^dr Gucht Scul.

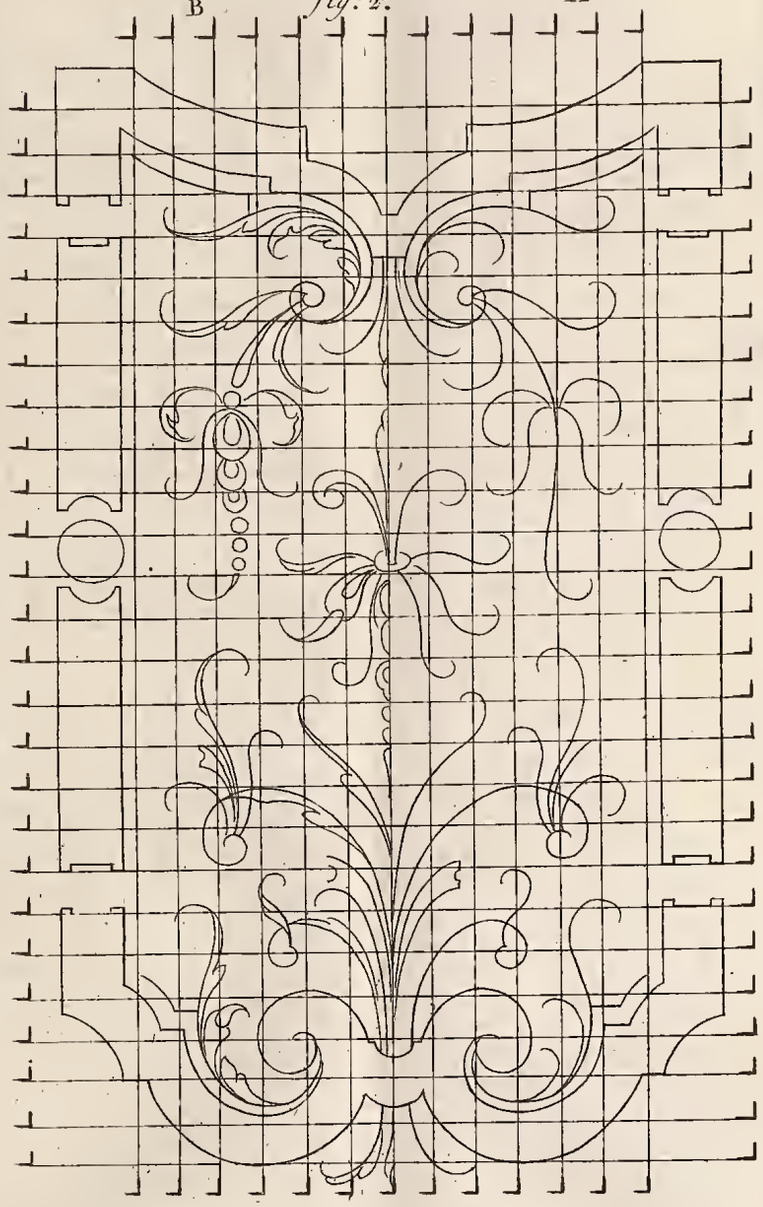
The Parterre C drawn & Squar'd over upon paper.

fig: 1.st

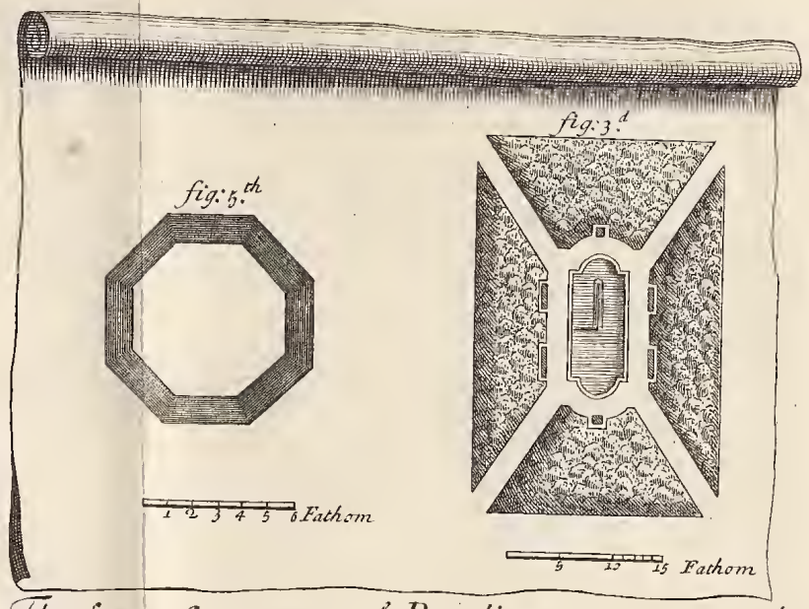


The same Parterre C Squared out, & traced upon y.e Ground.

fig: 2.d



The Grove V & y.e Bowling-green X design'd upon paper.



The Same Grove V & y.e Bowling-green X traced out upon y.e Ground.

fig: 6.th

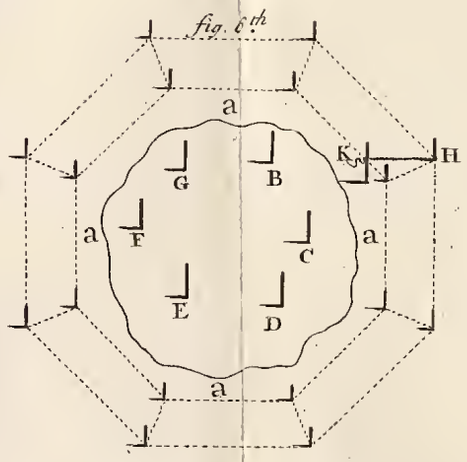


fig: 4.th

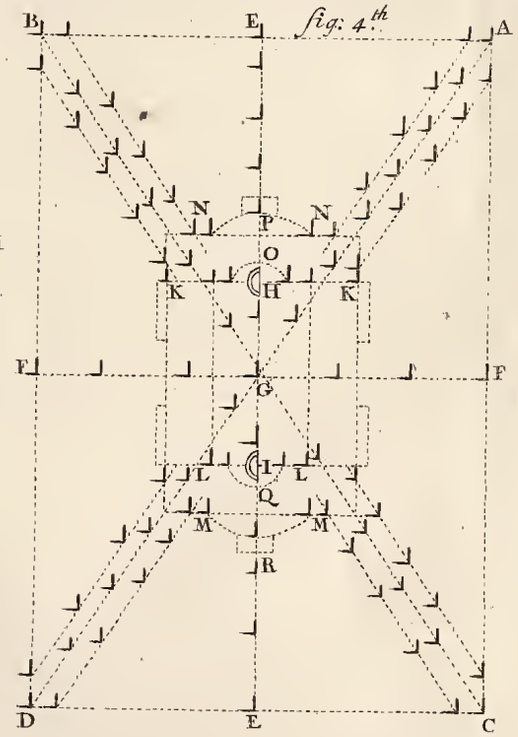


Plate K. Page 130.

M.r Gucht Scul.

Chap. V.

Of the Choice that ought to be made of Trees proper for Pleasure-Gardens, and of their good and bad Qualities.

'TIS of no small Importance, to know how to choose the Trees and Plants that are to be made Use of in Gardens. Those who have the greatest Skill, oftentimes find themselves deceived in Spite of all their Experience: However, there are some pretty sure Marks to distinguish good Plants from bad ones; which are to be found at the End of this Chapter, whither I refer you for all I have to say, or can be desired, towards making a true Judgment of their Goodness.

All the Trees that are commonly made Use of in Pleasure-Gardens, come under two Sorts of Names, the *Wild*, and the *Aquatick*.

The Wild are so called, because they naturally grow in Woods and Forests, as the Oak, Elm, Chesnut, Hornbeam, *&c.*

The Aquatick, which are much fewer in Number, are so named, because they delight in watery moist Places, and grow better there than any where else, as the Asp, Poplar, Alder, *&c.*

It will not be improper, before I come to speak particularly of the following Trees, to explain what is meant by Sets and Layers.

When we say a Tree comes up from a Set or Cutting, 'tis to be understood, that there is no more to be done, than to cut a Branch, sharpen it at the End, and thrust it into the

Earth, to make it take Root, and produce a Tree of the ſame Kind. Whereas to propagate by Layers is quite another thing, being to chooſe out the Suckers and pendent Shoots about the Foot of a Tree, and without cutting them, to lay them down five or ſix Inches deep in the Earth to make them take Root, and the ſecond Year to ſeparate them from the Body of the Tree, and tranſplant them.

I COME now to the Deſcription of all theſe ſeveral Trees, particularizing them one after another, and ſpeaking of their good and bad Qualities, which it is very material to know well, in order to make a good Choice of them: I begin with the Oak.

The Oak.

THE Oak is, as it were, the King of Trees, being one of the fineſt the Earth produces: It is very long a growing, but then it is likewiſe of the longeſt Duration. It ſtrikes a Root into the Earth almoſt as long as the Shoot it makes above Ground, which ſecures it againſt the higheſt Winds. It grows upright and tall. Its Wood is very hard, and moſt coveted of any for Building. Its Leaf is fine, and affords a great deal of Shade. The Oak is more proper for Woods and Foreſts, than to form ſtrait Walks, and is ſomewhat ſubject to * *May*-Bugs, and other Vermin. It yields a Fruit called an Acorn, which is ſown or ſet in the Earth, by which it is propagated. This Fruit ſerves alſo to feed and fatten Hogs.

* *Theſe are by ſome called Chafers, or Cock-Chafers.*

Elm.

THE Elm, likewiſe, is one of the fineſt Trees that grow. 'Tis ſaid of this, and of the Oak, that they are a Hundred Years a growing, a Hundred Years at a Stay, and a Hundred Years decaying; from whence you may judge they laſt a long Time. It ſhoots up ſtrait, and very high: Its Leaves are ſmall, but very thick; its Wood hard, and very proper for Wheelwrights Work; its Bark is ſomewhat rugged and uneaven. The Elm grows faſter than the Oak, and is more eſteemed for planting Walks and Groves. It is at preſent very much in Uſe, tho' many People will not plant it; becauſe they ſay the Elm is too luxuriant, ſpreading its Roots very far, in great Abundance, and almoſt eaven with the Surface of the Ground, which is all about them: It is very ſubject to the Caterpillar and Worms; it produces Seed, and

and is multiplied by Sets and Slips from the Foot of the great Trees.

WHAT we call *L'Ypreau* in *France*, is no other than the Elm with broad Leaves, commonly called the * Female Elm, which is very much sought after for fine Walks; 'tis call'd *Ypreau*, because it comes originally from the Neighbourhood of *Ypres* in *Flanders*. Its Leaf is very broad, and much finer than that of the common Elm; it makes its Shoots very strait, and its Rind is very bright and smooth; it is a very quick Grower, but lasts not so long as the other Elm. It yields a Seed, and puts out Suckers, but is subject to *May*-Bugs, Caterpillars, and other Insects.

* *An Opinion very unlikely, to believe Trees have their Male and Female: However, Authors are so divided upon it, that 'tis a Question undetermin'd at present.*

THE Chesnut is one of the most considerable Trees that are, in respect of its Profit: It grows upright and tall, but does not like every Soil. Its Bark is fine and bright, and its broad Leaves make an agreeable Shade: It is more proper to plant in Woods than in Walks, unless it be in the Country, or in some Park, where you set them in By-Places: Its Timber is white, and bends easily, and is made use of for Hoops: Its Fruit, the Chesnut, is much esteemed, and is very profitable. There is abundance of them eaten, and in some Countries they make Bread with them. This Tree likewise lasts a long Time, and is subject to no Vermin. 'Tis pretended too, that Carpenters-work made of Chesnut-Tree, will never rot nor decay. Chesnuts are sown as Acorns.

Chesnut.

THE Lime or Linden-Tree, is one of those that are most sought after for planting Alleys and Groves. It grows strait and high enough, makes a fine Head, and its Rind is smooth, and very bright: In the Summer-time it puts out Flowers, the Smell of which is very agreeable: Its Wood is not the most esteemed, being white, and of little Use in Work; however, they make Well-Ropes of its Rind. This Tree is subject to no Insects; but it weeps, and easily grows hollow, so that 'tis of no long Duration. There is a Kind of it call'd the *Dutch* Lime, which is most esteemed, because of its large Leaves; it yields a Seed, and is easily produced by Layers.

Lime-Tree.

THE

Horse-Chesnut.

THE *Indian*, or Horse-Chesnut, so called, because the Chesnuts were brought first from *India*, that multiplied the Species of them in *France*, is one of the most agreeable Trees to Sight that can be. Its upright Stem, its smooth Rind, its regular Head, its handsome Leaves, and its piramidal Flowers, make it sought after more than any other. It is proper only for making Walks, being a very ill Tree to plant in Squares of Wood. It does not rise very high, but grows very upright; its Wood is tender, breaks easily, and is fit for no Use, not so much as to burn, growing only black, and deadning the Fire, so that it is a Tree of no Kind of Profit. Its Fruit is good for nothing but to plant, yet 'tis reported, they have lately found the Secret of making Powder for the Hair with it. All the Excellency of the Horse-Chesnut lies in its growing fast, but then it lasts but a little while, and is very subject to *May*-Bugs and Caterpillars, which strip it so entirely of its Leaves, as to leave its Head quite naked and bare.

Beech.

THE Beech is a Tree that grows very beautiful, and one of the straitest that are; its Bark is smooth and shining, its Leaf somewhat small, but very handsome; its Wood hard, and useful for abundance of Works. This Tree is very fit to form Walks, Palisades, and Woods; but 'tis very subject to *May*-Bugs and Caterpillars. It produces a Fruit called *Beech-mast*, which is eaten by some, and has the Taste of a small Nut: They make Oil of it, and sometimes Bread, in Times of great Scarcity; its Species is propagated by sowing the Fruit.

Horn-beam.

HORN-BEAM has much Conformity with the Beech, their Bark and Leaf being very much alike: It is fit, as the Beech is, to form Walks, Palisades, and Woods; but especially Palisades, in which 'tis made Use of more than any other Plant. Then the *French* change its Name, and instead of *Charme*, call it *Charmille*, which imports no more than small Plants of Horn-beam about two Foot high, and no bigger than a Wheat Straw; it bears no Fruit, but abundance of Seed, which is very tedious to raise; its Wood is very good to burn. This Tree is difficult to take Root, unless it be in fresh

freſh Land, and is very ſubject to Caterpillars and *May*-Bugs.

THE Maple has this peculiar Excellency, that it grows in the Shade, and under great Trees. It riſes to a moderate Height, but ſomewhat crooked; its Wood is very hard and full of Veins, and is made Uſe of for ſeveral Moveables, and Muſical Inſtruments; its Bark is very rugged, its Leaf of a pale Green, and not ſo handſome as that of the Beech or Horn-beam. 'Tis made uſe of to fill up a Wood, and to plant Paliſades, and is at preſent much in Requeſt. It yields Seed which grows very faſt, and the Tree is ſomewhat ſubject to *May*-Bugs. *Maple.*

THE Aſh is the meaneſt of all theſe Trees; 'tis not but that it grows fine and ſtrait, but the little Greenneſs it affords, and its unwholſome Shade, makes it ſeldom uſed in Gardens, unleſs it be in Woods; its Leaf is extremely ſmall, and of a pale Green; its Timber is very ſmooth and free from Knots, which makes it uſeful for ſeveral Purpoſes. This Tree is very ſubject to the Flies *Cantharides*, and yields a Seed by which it is propagated. *Aſh.*

THE Sycomore riſes pretty high; its Wood is very tender, and when broken, there comes a Milk out of it, as out of the Fig-Tree; it is fit for little or no Uſe; its Rind is ſmooth enough, and its Leaf, which is much like that of the Vine, is very large: It laſts not long, and a little Matter kills it: The beſt Quality it has, is, that it grows very faſt, and in any Ground. This Tree is ſo ſubject to all Sorts of Vermin, that it is not much ſought after for Gardens: It produces a great deal of Seed, which falling of itſelf, grows with as much Eaſe as Weeds do. *Sycomore.*

THE Birch is one of the leaſt Trees, tho' it riſes to a ſufficient Height. Its Wood is white, and good for nothing but to make Brooms, and ſuch trifling Buſineſſes; its Rind is whitiſh, and ſomewhat rough. It affords but little Shade, its Leaves being very ſmall, and like thoſe of the Poplar. This Tree helps us to the firſt Verdour of the Spring, and is liable to no Sort of Vermin, which is the beſt that can be ſaid of it, but it is very ſubject to weeping. There is ſome Controverſy amongſt Authors, whether this Tree be of the *Birch.*

Aquatick

Aquatick or wild Kind, becauſe it grows equally well in moiſt or dry Places; it yields a great deal of Seed.

Acacia. THE Acacia, called the *Common Acacia of* America, was formerly much in Vogue. This is a Tree that does not riſe very high; its Wood is hard and uneaven, its Leaves ſmall, affording but little Shade, and its Boughs full of Prickles. All this Tree could be valued for, formerly, when they planted abundance of Walks and Arbors with them, was, that it grows very faſt, and puts out Flowers in the Spring that have a very agreeable Smell. But being a Tree very ſubject to weep, having a rugged Bark, and very ſmall Leaves, it is at preſent in no great Eſteem. They have got a Cuſtom of heading it from Time to Time, which makes it look even worſe than it would do. This Tree alſo ſeeds, as well as the others.

Plane-Tree. THE *Platanus*, or Plane-Tree, is one of the nobleſt Trees that are; 'tis not ſo common in *France*, as in *Italy* and *Spain*, by reaſon it naturally loves hot Countries. This Tree riſes very ſtrait and beautiful, and yields abundance of Shade: Its Wood is hard and inclining to white, as is alſo its Bark, which is very ſmooth: Its Leaf reſembles that of the Sycomore; 'tis raiſed from Seed in *France*, but not without ſome Difficulty.

Aſp. THE Aſp, or Aſpen-Tree, as well as the three following, is of the Nature of thoſe that like the Water, which makes them called Aquatick; it ſhoots up tall and ſtrait; its Wood, which is whitiſh and light, ſerves for many Purpoſes; its Bark is ſmooth, and inclining to white; its Leaves are round, of a pale Green, and always ſhake with the leaſt Breath of Wind, for which reaſon the *French* call it *Le Tremble*. There are fine Walks of it planted about Canals and Ponds; it grows very faſt, and is raiſed by Cuttings and Layers.

Alder. THE Alder-Tree grows very tall and ſtrait; its Wood is pretty much like that of the Aſp, and its Leaf like that of the Haſel; its Bark is very ſmooth, and of a blackiſh Colour. 'Tis of Uſe for ſeveral Works, but particularly for making Pipes to convey Water in, and is propagated as the foregoing, by Sets and Layers.

THE

THE Poplar differs but little from the Trees last mention'd; it grows to a considerable Height, and very quick. Its Wood is white, easy to cleave, and fit for very few Uses. Its Bark is smooth and whitish, as well as its Leaves, which are broad, clammy, and of a shining Green. It grows likewise from Cuttings. *Poplar.*

THE Sallow or Withy does not shoot very high, and is the least of all these Trees; its Wood is white, and fit to make Baskets and Poles of; its Bark is very ugly, its Leaves small and longish, and of a faint Green. The Willow is very subject to weep and grow hollow, and so is of no long Continuance; it is headed every three or four Years. It grows from Cuttings, which the *French* call *Plançons*, or Settlings, which they plant upon the Banks of Rivers, and in marshy Places. *Sallow.*

THE Trees we call Aquatick, have a peculiar Merit, which distinguishes them very much from those of the Woods, in that they are subject to no Vermin, by a Natural and Physical Reason, which is, that they are of so cold a Nature, that the Insects cannot lay their Eggs upon them.

ALL the Trees hitherto mention'd, are, in general, called Forest-Trees; those that follow being but Shrubs, made use of in Woods to fill up and furnish Brush-wood at the Foot of the great Trees.

THE White-Thorn, call'd by the *French L'Aubepine*, is one of the most considerable Shrubs, as well by reason of its Flowers which yield a very sweet Smell, as for that it allures the Nightingale, the most charming Musician of the Woods. This Shrub grows without Difficulty; 'tis armed with very sharp Prickles, which makes it used in planting Quickset-Hedges, the Approach of which it defends with its sharp Thorns; its Leaves are indented, and of a very fine Green. The White-Thorn is very subject to Caterpillars, and is raised from Seed and Layers. *White-Thorn, vulgarly call'd in* France, Noble Epine.

THE Hasel, or Nut-Tree, is also one of the finest Shrubs for garnishing of Groves; its Wood is very bright, and puts out abundance of Boughs; its Leaf is handsome and very broad, especially that of the Filberd, the Fruit of which is most esteemed: Its Species is propagated by sowing the *Hasel, or Nut-Tree.*

Fruit, or Nuts, or elſe by Layers. This Shrub has ſeveral wonderful Properties attributed to it, relating to Secrets, ſuch as to find out Water, Thefts, Murders, and hidden Treaſures; but theſe are not much to be rely'd on.

Judas's *Tree.* THE Tree of *Judas*, or of *Judea*, is very much eſteemed, upon account of its fine red Flowers; it grows to a conſiderable Height, and very thick: Its Wood is blackiſh, and its Leaf reſembles that of the Apricock-Tree. It is multiplied by Seed and Layers.

The Ozier is a Shrub of the watery Kind, which ſhoots not up very high. Its Wood is ſlender, and very pliable. 'Tis fit for Hampers, Baskets, and abundance of other Purpoſes, which makes it very profitable, becauſe it is often cut: Its Leaves are like thoſe of the Willow, and it is produced by Cuttings and Layers.

THERE are, beſides theſe, ſeveral Kinds of Shrubs, the particular Deſcription of which would carry me too far from my Purpoſe; wherefore, I ſhall content myſelf to give the Names of them in general, ſuch are the Lote-Tree, the Baſtard-Sena, the Service-Tree, the Cornel-Tree, the bitter Cherry-Tree, the Neapolitan-Medlar, *&c.* moſt of which are perpetuated by their Fruits.

IN garniſhing Woods, they make uſe likewiſe of Plants of Horn-beam, Maple, Elm, Oaklings, and Cheſnuts, which are kept headed on purpoſe to make handſome Tufts and Thickets of Under-wood.

THE Shrubs made uſe of in the Borders of Parterres, are ſtill very different from thoſe juſt mention'd, being of a much ſmaller Kind, for which Reaſon the *French* call them *Arbuſtes:* Such are the common and *Perſian* Lilaches, the *Dutch* and Monthly Roſe-Trees, Honyſuckles, Syringas, common Jaſmins and Jonquils, Privet, Sweet Trefoil, Roſemary, *Spaniſh*-Broom, *&c.* which Shrubs are ſo well known by every one, that I ſhall make no Deſcription of them in this Place. Their Choice depends upon every ones Fancy, each having its peculiar Worth and Excellence.

NOTHING remains, but to ſpeak of thoſe Trees and Shrubs that are not ſtript of their Leaves in Autumn, but keep their Verdour in the coldeſt Weather in Winter, which gives

gives them the Name of Ever-Greens. These that follow, are such as are ordinarily made use of in Gardens.

THE Yew is one of the finest Ever-Greens; it grows as tall or as low as you please; and, in a word, may be brought to any Form, by clipping. Its Wood is very hard, its Branches very full of Leaves, of a deep Green, and extremely pleasant to the Eye. It is fit for Palisades, as also for garnishing the Borders of Parterres. 'Tis pretended, that its Shade is very dangerous and * unwholesome. It bears a Seed which is very long a raising, and is multiplied also by Layers. *Yew-Tree.*

* Fatale est dormire sub Ilsum.

THE Picea, or Pitch-Tree, is pretty much like the Yew in its Wood and its Leaf, but it shoots up much higher, and does not grow so handsome, nor so thick of Branches, as the Yew does. It is proper only in Woods, and in great double Walks, where 'tis planted between the detached Trees. They make no use of it now-a-days in Parterres, because it grows too high, and is very subject to be unfurnished at Foot. The Picea bears a Seed which is not so long a coming out of the Ground, as that of the Yew. *Picea.*

THE Fir-Tree is one of those that rise the highest and straitest of any; its Timber is white of Colour, and light, but very stiff, which makes it used for Masts of Ships. Boards are likewise made of it, which serve for abundance of Purposes: Its Leaves are much like those of the Yew; it is fit only for Woods and Forests, and especially for hilly Places. It bears a scaly Fruit of a piramidal Figure, call'd the *Fir-Apple*, which contains the Seed. *Fir-Tree.*

THE Pine is a Tree very different from the Fir, though many People confound one with the other. It shoots up very high, and pretty upright. It puts out abundance of Branches which are very full of Leaves above, and quite naked below. Its Timber is reddish and heavy, and its Leaves are narrow, long, and prickly; its Bark inclines to a black, and is very rough. It produces a rosinous Gum, with which they make Pitch and Tar for Shipping. This Tree, as well as the Fir, loves Mountainous Places. Its Fruit is call'd the *Pine-Apple*, in which the Seed lies. *Pine-Tree.*

Cypress. THE Cypress is a very beautiful Tree, and rises to a great Height. It is furnished very thick from its Foot to its very Top, which terminates in a Point. Its Timber is very hard, and of a good Smell: Its Leaves, which are of a whitish Green, are very thick; it is proper for making Alleys and Palisades. Its Fruit, call'd the *Cypress-Apple*, incloses its Seed, which is somewhat tedious to raise.

Scarlet-Oak. THE Scarlet-Oak, or Holm, somewhat resembles an Apple-Tree or Pear-Tree; it does not rise so high as the common Oak, and its Wood is very different, but its Leaves and Acorn are much like it, except that they are smaller, and of a light Green. This Tree is proper to make Walks of, and its Species is perpetuated by the Acorn it bears.

THOSE that follow, are only the Shrubs and Plants made use of to form Palisades, to furnish the lower Parts in Woods of Ever-Greens, and to set off the Borders of Parterres.

Holly. THE Holly passes for one of the finest Ever-Green Shrubs that are to be met with; it does not grow very high, but is of a shining Green, and very charming: Its Wood is very hard, of which they make Wands and Riding-Switches. Its Leaves are jagged, and beset with Prickles. It is multiplied by Seed.

Juniper. THE Juniper Tree shoots pretty high, and smells very well: Its Wood is very hard, and its Leaves small and prickly: It produces Seed.

Phillyrea. THE Phillyrea is a Shrub that does not rise very high: Its Wood is blackish, and its Leaves resemble those of the Olive, but are shorter, and of a tolerable good Green. This Shrub grows very well furnish'd, which makes it esteemed for Palisades; it grows without Difficulty even in the Shade, and is propagated either by the Seed or Layers.

Savine. SABIN, or Savine, grows very tall for a Shrub; its Stem is somewhat bulky, and its Wood is very hard; its Leaves are like the Cypress-Tree. It is multiply'd by Seed and Layers.

Pyracantha. THE Pyracantha, which the *French* call *Le Buisson Ardent*, is pretended to be the same with that, in which Scripture tells us GOD appeared to *Moses*. It does not grow very

very tall, and its Leaf is very much like that of the Plum-Tree. Its red Berries, which continue on it in the Winter, and which, at a Diſtance, make it look as tho' it were full of Fire, have given it the Name of the *Burning Buſh*; 'tis in theſe Berries its Seed lies.

THE Alaternus reſembles the Olive-Tree in its Leaves; they are of a blackiſh Green, and pretty thick; it is very fit to make Paliſades with, and is raiſed from Layers. *Alaternus.*

THE Box-Tree is a green Shrub of the greateſt Uſe, and one of the moſt neceſſary in Gardens. There are two Sorts of it; the Dwarf-Box, which the *French* call *Buis d'Artois*, the Leaves of which are like thoſe of the Myrtle, but greener and harder. This is made uſe of for planting the Embroidery of Parterres, and the Edgings of Borders. It naturally does not grow very much, which makes it called Dwarf-Box. The other Kind is the Box-Tree of the Woods, which advances much higher, and has bigger Leaves than the former, which makes it fit to form Paliſades, and green Tufts for garniſhing of Woods; it comes up in the Shade, but is a long Time a gaining any conſiderable Height: Its Wood is yellowiſh, and very hard. It is put to a great many petty Uſes, as the making of Combs, Balls, *&c.* Both theſe Kinds of Box yield a Seed, but it is commonly produced by Slips. *Box.*

ONE thing muſt be ſaid in Praiſe of theſe Ever-Green Trees and Shrubs, that the Hardneſs of their Wood and Leaves, ſecures them from all Sorts of Inſects and Vermin.

AS the Climate of *France* is very different from that of the *Indies* in the Degree of Heat, it is better to raiſe Ever-Greens from Slips and Layers, than to ſow the Seed, which often fails, or, at leaſt, is a great while a coming up.

THE Advantage to be drawn from Ever-Greens, rather reſpects the Art of Phyſick, in which they afford ſeveral Remedies, than the Uſe to be made of them in Trade, whether for Building, Artificers-Work, or Fewel, in all which the Trees firſt mention'd at the Beginning of this Chapter, are very ſerviceable; and upon this Account it is that there are ſo great a Number of theſe Ever-Green Plants in the * Royal Phyſick-Garden.

* Fauxbourg S. Victor.

THESE

THESE are all the Trees and Shrubs that are ordinarily made uſe of in fine Gardens. In the ſhort Deſcription of which, I have endeavour'd to include a general Idea of each Tree, mentioning its Height, its Leaves, its Wood or Timber, and the Uſe that is made of it; its proper Place in Gardens, the Vermin it is ſubject to, and the Manner of perpetuating its Species, which are all of Uſe to guide you in the Choice you have to make of them. However, I now proceed to give you my Opinion of thoſe that ſeem to me to be the beſt, and that I adviſe you to employ in planting your Gardens.

THE Trees ordinarily made uſe of to form handſome Walks, are Elms, Limes, and Horſe-Cheſnuts: Walks of Elms, when well kept, grow very tall and lofty; they put out beautiful Leaves, and are withal very laſting: Walks of Limes are likewiſe very handſome, eſpecially when they are *Dutch* Limes. Theſe Trees are known to ſhoot up very high, they have a ſmooth Bark, a moſt agreeable Leaf, and yield abundance of Flowers that ſmell very ſweet; beſides which, they are ſubject to no Sort of Vermin. Theſe are the two Kinds of Trees I adviſe you conſtantly to make uſe of, preferably to the Horſe-Cheſnut, notwithſtanding it is ſo much in Faſhion. I cannot deny but the Horſe-Cheſnut is a handſome Tree; 'tis certain it grows very upright, has a fine Body, a poliſh'd Bark, and a beautiful Leaf; but the Filth it makes continually in the Walks, by the Fall of its Flowers in the Spring, its Husks and Fruit in the Summer, and its Leaves in the Beginning of Autumn, mightily leſſens its Merit: Add to this, that it is very ſubject to *May*-Bugs and Caterpillars, which ſtrip it quite naked in the Summertime; that its Shade, as is pretended at leaſt, is very unwholſome; that it grows but to a moderate Stature, laſts but a very little while, and that its Timber is of no manner of Profit.

THE right way of chooſing Elms, Limes, Horſe-Cheſnuts, and generally all the Trees above-mention'd, conſiſts in the three following Obſervations, which contain all that can be ſaid upon this Subject.

THE

THE first is to examine if a Tree be strait, of a fine Stem, of a bright and smooth Rind free from Moss; if it have good Store of Roots, and very fibrous; if it be well drawn, without breaking or wronging the greater Roots. You can't be deceived in believing a Tree in this Condition good, since it has all the Qualities requisite to make it, in Time, a fine Tree. But, if the Plant be crooked, short, and mishapen, its Bark scabby and full of Moss, and its Roots broken and shiver'd, or very much unfurnish'd, and not fibrous, the Tree is doubtless good for nothing, and you ought to reject it entirely. You may confidently depend upon this Observation, which indeed is the most essential of all, and will hold as a general Rule for all the Plants you can suppose.

THE second Thing material to be observed in the Choice of Trees, is, that they be taken out of worse Ground than you intend to put them into. The Reason is, that the Trees liking this better Earth, take Root again sooner, become more bulky and strait, grow infinitely faster, and are not so subject to be cover'd with Moss. Whereas, if your Plants come out of as good Earth, or better than that into which you remove them, they droop and languish, grow crooked, grubby, and full of Moss; and at last die away, and seem to bewail, if I may so say, the Loss of their first Nurse.

THE third Observation is, not to insist too much upon the Bigness of Trees; for I esteem a Tree of a moderate Size, better than all the great ones that are sought with so much Earnestness; and there is more Hope of its taking Root when 'tis about six or seven Inches in Compass, than when 'tis very large. There are also more of these great Trees die, notwithstanding all the Precautions that can be taken, than of those that are of the Size I mention.

As to Palisades, the Plants that are most esteemed for them, are Horn-beam, Beech, and Maple, which, to be good, should have their Bark bright and smooth, and their Root very fibrous. They should be drawn from a Nursery, where they were raised from Seed; you may easily know that a Plant is taken from a Nursery, when it is strait and fair, and its Tap-Root not hooked; for the Plants of Horn-beam and

Maple

Maple, that are drawn out of the Woods, are not worth transplanting, being no better than Shoots and Suckers from those Roots, which the *French* Gardeners call *de la Crossette*, from their having the Form of a Cross.

THE best of these three Plants, in my Opinion, is Horn-beam; but unless it be planted in fresh Ground, and a very clear Exposure, it is difficult to raise: Maple, on the contrary, grows every where, as well in the Shade as in the open Air.

YEW and Box are also made use of for planting Palisades, which having the Advantage of being always green, are very much distinguished from the others.

THE Yew, Picea, and other Ever-green Shrubs, to be good, should be of a deep and very lively Green, inclining to a Dark, without looking changed or yellowish, which is their Distemper. They are raised in Baskets of Earth, of which you should take Care to choose those that are at least a Year or two old, which the *French* call the * *old Basketted*: This is a necessary Caution, as is that too of choosing the most vigorous, which are always the best.

* Vieux en manequinés.

THE Box proper for planting Palisades, is the Wood-Box; it should be drawn somewhat tall and strong, with good Roots, and very fibrous: For the Dwarf-Box, which makes the Embroidery of Parterres, it should be young, small and fibrous, not too dry; and that which has the least and most delicate Leaf, is most esteem'd. If you follow this Rule in choosing it, you will not be obliged to pull up your Parterre every five or six Years, by reason of the Height of the Box, notwithstanding all imaginable Care be taken to clip it often.

FOR such Squares of Wood as you would have shoot up very high, all the Trees before mention'd may be employ'd in them; however, those that are most esteemed, are the Oak, Elm, Chesnut, Beech, and Horn-beam, which grow very tall, form a beautiful Covert, and are very profitable. For planting Thickets and Under-wood at the Foot of the great Trees, Sets of Horn-beam, Maple, Filberd, Lime-Tree, and White-Thorn, are the best, and make the most bushy Heads;

Heads; however, all Plants in general are not improper for this Use.

IN low and marshy Places you may plant Asp, Poplar, Birch, and Alder, as best for the higher Trees, and fill up with Oziers, Willow, Hasel, *&c.* As for what concerns Woods of Ever-Greens; Cypress, Fir, Pine, Picea, and Scarlet-Oak, should be chosen to make the Walks, and the tall Wood within, as being those that shoot the highest, and most upright. You may plant the Palisades with Yew, Box, Phyllirea, and Cypress; and the Thickets with Juniper, Savine, Lawrel, Alaternus, Holly, and other Ever-Greens above-mention'd. *As the green Woodsat-Kuel.*

CHAP. VI.

Of the Manner of Planting all the different Parts of a Fine Garden.

ALL that has been ſaid in the foregoing Chapters, would ſignify nothing, without the Addition of what is contained in this and the following Chapter; the Uſefulneſs and Neceſſity of which, are ſufficiently known to all the World. Were the Ground never ſo well dreſs'd, the Garden truly traced out, and the Trees never ſo well choſen, all would be to no purpoſe, if you were ignorant of the right Method of Planting, and of the Care that ſhould be taken of young Plants, to raiſe them as they require.

THE Buſineſs of raiſing Trees to a fine Stature in a little time, depends upon Two Things; good Planting, and the Care to be taken of them according to the different Seaſons of the Year. The firſt of theſe I ſhall treat of in this Chapter, and refer what I have to ſay of the latter to the Chapter that follows.

PLANTING differs according to the different Parts that compoſe a Garden; all which muſt be diſtinctly ſpoken to, in order to know how to plant them. I begin with Parterres.

A PARTERRE being traced out, as has been before deſcribed in *Chap.* 4. the Box choſen, according to the Obſervation in the foregoing Chapter; and the Ground well prepared, and dreſs'd; take a * Dibble, and a Spade, (which are two Inſtruments the moſt made uſe of in Gardening) and

* *A Setting-Stick.*

and after having trimm'd the Roots of the Box, and cut away some of their Fibers, make a little Rill, or Trench, with the Dibble, or Setting-Stick, about half a Foot deep, keeping exactly in the Track of the Design; then take away the Dibble, and widen the Inside of the Trench a little, to receive the Box, which you are to place in Order, burying the Roots of it up to the Neck, that is, that nothing appear out of the Ground but the Leaves: After which, give two or three Strokes with the Setting-Stick, all about what you have just planted, to close the Earth again, and fill up the little Cavities. The Box being thus put in the Ground, you range it either with the Back of the Setting-Stick, or your Hands, and give it the Shape and Turn it ought to have, according to the Design; settling the Earth well all about it, for fear the Air get in, and spoil it.

THE Dibble is thus to be made use of every where, except in great Lengths, and very large Edgings of Box, as the Sides of Borders, and the greater Branches of the Embroidery, which may be done with the Spade: In these you strain a Line, according to the Draught, from one End to the other, and opening a Rill with the Spade, set your Box in it, and cover it afterwards with Earth, which makes much quicker Dispatch than the Dibble.

THE Parterre being thus planted, you dig the Places designed for Borders with the Spade, and fill them with Mold mixt with good Earth, which you lay rounding in the Middle like an Ass's Back; and then space out, and mark with Spikes, the Places where the Yews and Shrubs must be planted pursuant to the Design, causing Holes to be dug for them according to their Size. I have already said, in the 4th Chapter of the First Part, that very large Yews and Shrubs are now out of use, because they hinder the Prospect; so that these Yews having at most but four or five Foot Height, the Holes will be big enough, if open'd three Foot square, and two Foot deep. These Holes being made, cause a Yew to be brought to one End of the Border, and cutting its Basket, uncover the Clod, and trim the straggling Roots that exceed it; then throw a little good Earth into the Bottom of the Hole, and set your Tree in the Middle of

the Border, measuring it very exactly; secure it a little, by throwing in some Earth upon it till the Hole be half filled up, and plant another Yew at the other End; and having thus planted two, you space out and range all the others by them.

IN Borders the Yews are generally set at 12 Foot distance, with a Shrub between; but this Rule can't be follow'd where the Borders are cut, or where they are in Compartiment; you must then be governed by the Design, and confine yourself to certain stated Places.

YOU must observe, in Borders that are twisting and circular, to plant the Yews in the Middle, at equal Distances one from another, and as upright as possible by your Eye, which is the surest Method, having no Range to take, and the Line being of no Service.

THIS is all the Difficulty in Parterres, which must not be clipped till the second Year after they are planted, that the Box may take Root, and gather Strength. You then revisit your Parterre from one End to the other, and new furnish with Box the Places that require it. They make use of Shears for the clipping of Parterres, which must be kept very close, without altering the Design: In Borders and strait Edgings of Box, you may strain a Line to clip them by.

THE most proper Time to trim a Parterre, is the Month of *May*. If the Ground be somewhat dry, you must water the Box well the first Year it is planted, in order to hasten its striking Root.

THE Walks and Counter-Walks, that are to be planted with Elms, Lime-Trees, Chesnuts, *&c.* being drawn, you drive Stakes at every 12 Foot distance, to mark out the Place of each Tree. This Distance is a Mean between the nine Foot from Tree to Tree, allowed by some, which is not enough, and the 15 or 18 Foot given by others, which is too much; the Distance of 12 Foot is reasonable, and more in use than either of the others. At each of those Spikes, cause Holes to be dug of four Foot square, and three Foot deep. If the Bottom of Earth be good, you may make use of it; but if it look exhausted and dry, you must bring in better,

or

or take ſome of the upper Mold, and throw in ſeven or eight Inches Depth of it into the Bottom of the Hole.

BEFORE you plant your Trees, they ſhould be cut to eight or nine Foot Height, by taking off their Heads, unleſs they are raiſed in Baskets, as ſhall be mention'd by and by. Then their Roots muſt be trimmed, by cutting away the Extremities of the Fibers, and their broken and bruiſed Roots, which the *French* call * Dreſſing a Tree. This done, you ſet the Root of the Tree in the Middle of the Hole, ſpreading out all the ſmall Roots, and filling in the Earth about them with your Hand, taking Care that no Stones or hollow Places be left towards the Bottom, which would expoſe the Roots to the Air, and hinder their Connexion with the Ground. Your Tree being well ſecured, let the Earth be entirely filled in all about it, and ſettle it down by treading on it.

* Habiller un Arbre.

WHEN you have planted two or three Trees in a Row, as their Places are ſtaked out, that is to ſay, a Tree at each End, and one in the Middle of the Line, you may then take away all the Stakes as uſeleſs, theſe three Trees being ſufficient Direction for you to ſet all the others in the ſame Range. It muſt not be ſuppoſed that all the Holes are to be made at the ſame Time; you ought to leave Stakes at certain Diſtances, till you have planted two or three Trees upon a Line. This is a general Rule for planting all Sorts of Trees, increaſing or diminiſhing the Size of the Holes, as Occaſion requires.

THOSE who deſire to have a fine Garden in little Time, though it coſt them ſomething more, make uſe of Trees raiſed with their Clod or Earth about them, by which they gain five or ſix Years Growth; becauſe theſe Trees being raiſed with a Body of Earth that covers their Roots, are planted at their full Height, without cutting; whereas other Trees, whoſe Roots are bare, not having Strength enough to nouriſh their Head, muſt neceſſarily be taken off to eight or nine Foot Height, as was juſt now mention'd. From whence 'tis evident, that a Gentleman, by planting Trees in their Clod, gains the Time thoſe Trees neceſſarily require to make another Head; beſides that they are infinitely

finitely more beautiful, not discovering their Removal, as those do that have been headed. I have planted Elms in their Clod 30 Foot high, and as big as one's Thigh, which have taken again to a Wonder; by this Expedient you plant Trees at their full Bigness, which was never done heretofore, and enjoy a Garden ten Years the sooner, by means of this admirable Contrivance.

GREAT Care should be taken how you follow the Advice of some* Gardeners, who pretend that you may plant a Tree boldly at its full Height without cutting of any thing, though it have no Clod about its Root. These Men, to support their Opinion, affirm, that this Body of Earth binding up the Roots too much, which you are obliged to cut short, hinders them from doing their Office, and extending themselves with Vigour; whereas, when the Roots of Trees are uncover'd their whole Length, they are placed in Order, and filled up with Earth much better; besides that being thus incited as it were on all Sides, they more easily shoot and fasten themselves in the Ground.

** These Gardeners have written of Fruit-Trees, of which having had some Experience, under that Pretext they expect to be credited in the Business of transplanting Elms, and other Trees belonging to Pleasure-Gardens, the Culture of which is, in a Manner, unknown to them.*

THIS is an Opinion that Experience has often found to be false, and which I advise you by no means to follow; for when Trees have no Earth about their Foot, or that the Clod is broke in carrying of them, they are in great Danger of dying, the Sap of itself not having Force enough to rise to the Top of the Tree, and to nourish its Head, unless assisted by this Clod of Earth, which is that in which the Tree was raised, and which nourishes and maintains its Roots, till they have Strength enough to penetrate the new Ground that is about them. In the 8th Chapter I shall describe the Manner of raising Trees in their Clod.

FOR planting Palisades, you are to strain a Line according to the Draught traced out, or to the Row of Trees, if there be any, and, with the Spade, open a Trench or Rill a Foot deep, taking Care to preserve one of its Sides from slipping down, and to open the Trench upon the Inside of the Walk, which is always best for the Plants. This done, kneeling down with your Left Knee upon the Edge of the Trench, take the Plants one by one, after having trimmed the Extremities of the Roots a little, and set them two or three

three Inches asunder, according to their Size, holding the Plant against the Ground, which, upon one Side of the Trench, should be cut perpendicular, and keeping it there with the Back of your Left Hand, throw in the Earth about the Roots with your Right Hand, till they are quite cover'd. Take Care that the Plants be set right, and well adjusted one with another; after which fill up the Trench entirely, and tread the Ground with your Feet to settle it.

PALISADES that are planted large, and six or seven Foot high, are not so sure of taking Root, as the young Horn-beam which I esteem infinitely the better: But there is an ill Custom amongst Gardeners, which is to cut the Horn-beam to the Level of the Ground, which is very injurious to it, and hinders its growing upright, making no more than a Parcel of Stubs, springing out of one Side and the other. I made the Experiment of a Palisade of Horn-beam cut in this Manner, and of another which I let grow its whole Height; and I found that the Palisade which had not been cut, came up much better and more upright than the other, though in the same Ground.

A SMALL Space should be left behind the Palisades when they are planted against a Wall, partly for the Palisade, that you may come to work at, and to clip the Back of it; and partly for the Wall, which, by this means, is preserved much better and longer.

YOU must take great Care of putting Dung into the Holes where you intend to plant your Trees, under the Pretence of dunging them, for if you lay the Dung too low, it is useless, by reason the Salt of it can't affect the Roots; and if you put it towards the Top, it will rot the Stem of the Tree, breed Worms, and dry up the Ground, all which are but too apt to bring a Mortality upon young Plants. You should put nothing into these Holes but good fresh Earth; and to keep the new planted Trees from the great Heats in Summer, you may spread, upon the Surface of the Ground about the Foot of them, six or seven Inches Thickness of half-rotten Dung, because 'tis then fuller of Salts and vegetable Spirits, which the Rain and Waterings will soak and carry down to the Roots of the Trees.

IF you have Holes and Trenches to dig in made Ground; or that which is ſandy and bad in itſelf, whether for planting Paliſades or Rows of Trees, you muſt then make Trenches clear from one End to the other, of four Foot deep, and bring in good Earth to fill them up with; in which you may boldly plant your Trees, that would otherwiſe do nothing but languiſh and die away.

AS to what relates to Woods and Groves, they are diſtinguiſhed into ſix Sorts, as has been before mention'd in the ſixth Chapter of the firſt Part; namely, Foreſt-Woods, Coppices, Groves of a middling Height with tall Paliſades, Groves open and in Compartiment, Woods planted in Quincunce, and Woods of Ever-Greens. I ſhall ſpeak of all theſe one after another, and diſtinguiſh the ſeveral Ways of planting them.

FORESTS and great Woods of high Trees, are ordinarily ſown with various Seeds and Fruits. 'Tis ſufficient to give the Ground deſigned for theſe one Ploughing, and then to ſow your Acorns, Cheſnuts, *&c.* as you do Corn; or elſe you may ſet your Acorns into the Ground at every ſix Foot Diſtance, in Rills made by a Line with the Mattock, which does it very quick, and makes the Trees appear, in time, at regular Diſtances.

THE beſt way of planting Woods, is to do it with rooted Plants, ſetting them at ſix Foot Diſtance one from another, and obſerving, above all, not to cut their Heads, for that would hinder their growing and ſhooting up one Day to a lofty Stature.

COPPICE-WOODS are planted or ſown in the ſame manner as Foreſt-Woods, but with theſe two Differences, that the Plants are ſpaced out, or the Fruit ſet at three Foot Diſtances, and the Heads of the young Plants are to be cut to make them put out Branches, and ſpread themſelves to a buſhy Tuft. Coppices ſhould be cut at every nine Years, and taken down to the old Stumps, which ſhoot again immediately.

THE Groves of a middling Height, with tall Paliſades, require more Care in the Manner of planting them. After you have dug the Ground, meliorated it in caſe of Need, and

and drawn exactly the Design of the Wood, you plant the Walks, Halls, Cabinets, *&c.* in the same Manner as was just now taught in this Chapter, speaking of Walks. So likewise you plant the Palisades, following exactly the Out-Lines and Returns of the Design, and opening little Trenches, as was mention'd above. To fill up the Middle of the Wood, which is the Business now to be spoken to, mark out Lines with the Cord at six Foot Distance one from another, and open them in Trenches a Spit deep, and about the same Breadth, in which plant your Elms, Chesnuts, *&c.* three Foot asunder; and between each Trench, after the Plant is set, and entirely recover'd, sow or set Acorns, Chesnuts, and all Sorts of Seed, to make your Thicket and Brush-Wood; and the Rows of rooted Plants will, in time, form the Head of the Grove, if Care be taken to trim their Branches, and conduct them to their proper Height.

THIS is the best Way to plant a thick Wood. For your farther Satisfaction, you may also observe to set a Plant somewhat stronger than ordinary in the Squares, and to inter the long Branches that trail along the Ground for Layers, instead of cutting them off, which will soon furnish the Wood; this thrives too, much better than sowing the Seed, as you do in planting great Woods and Coppices.

GROVES that are open, and in Compartiments, are very different from tall Woods and Coppices, in that the Middles of their Squares have no Wood in them, but are filled with Green-Plots in Compartiments, which are to be sown or laid with Turf, according to what is intended in the Design, and as has been already spoken to in the seventh Chapter of the first Part. As to the Walks and Palisades of these Woods, they are planted in the same manner as has been described above.

QUINCUNCES are planted as Walks, being in effect no other than several Rows of Trees, and many parallel Walks; ranging and answering the Lines of one another; you are only to take Care, in planting these Woods, to raise your Squares very exactly, and to set your Trees strait, so as to keep a Line from Corner to Corner, and answer one another directly, which is all the Beauty of them. There

needs no Paliſades nor Thickets in theſe Woods, ſo that it is very eaſy to plant. Sometimes Graſs-plots are ſown under the Trees, keeping ſome rolled Walks, as Occaſion ſerves.

WOODS of Ever-Greens are planted in the ſame manner as the others, there being no more Difficulty in them: You may have Recourſe to the foregoing Chapter, for chooſing the Trees moſt proper to plant the Walks, Paliſades, and Squares of theſe Woods.

As there is nothing longer a growing than a Wood, you ſhould conſult the Ground where you would plant it, examining the natural Bottom of the Earth by digging the ſeveral Places, and obſerving the Graſs that covers it. If the Ground be moiſt, and cover'd with Reeds and Ruſhes, plant in it thoſe Trees that love the Water; if it be dry, the Trees we call Wild will ſuit it better; for what will pleaſe the natural Soil ſhould always be regarded, otherwiſe the Wood will be a long time in coming up.

BY this you ſee the Difference there is between Woods, and Parterres, and Bowling-greens, which are finer from the firſt Day they are planted, than afterwards; whereas a Wood in its younger Age has nothing in it perfect, being deſtitute of that Shade which yields ſo much Pleaſure in Gardens, and which conſtantly makes one wiſh it ſomewhat older, and of a more advanced Age.

AS to the Time of planting Trees, it is better, in general, to undertake it before Winter, in the Months of *November* or *December*, than in the Beginning of Spring, as in the Month of *March*; the Trees and their Roots having time, during the Winter, to inure themſelves to the Ground, and to taſte it before the Sap riſes; beſides that the Rain and melted Snows ſoak and moiſten the Roots, and bind them faſter to the Ground. Trees that are planted when Winter is over, have not all thoſe Advantages, for being moved and tranſplanted too near the Time of the Riſe of the Sap, they more difficultly betake themſelves to the new Ground, and are longer before they ſtrike Root in it.

YOU

YOU may obſerve, that in dry Grounds eſpecially, 'tis better to plant before Winter, that the new-planted Trees may have the Advantage of the Rains, and Melting of the Snow, which they are in mighty Want of to allay their natural Drought; whereas in moiſt Places you may ſtay till the Month of *March*, or till ſuch Time the Earth is diſcharged of the Glut of the Winter's Wet, when it will be more proper for the young Plants to take Root in it.

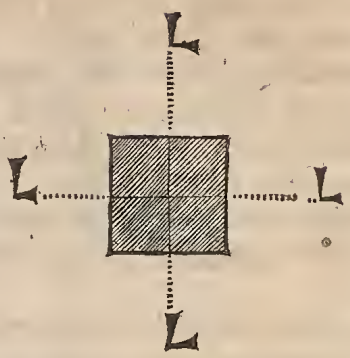
YOU ſhould always chooſe a dry Time for Planting, becauſe the Earth being dry, inſinuates itſelf better about the Roots, without leaving any Vacancy, and is not made Mortar of, which is very prejudicial to the Trees taking Root.

SOME Perſons pretend, that this Obſervation ſhould be made in planting a Tree, to turn it to the ſame Expoſition of the Sun, as it was in before tranſplanting: This at moſt can ſignify nothing, unleſs for Fruit-Trees; and I look upon it as one of thoſe Niceties you ought never to inſiſt upon, being, in my Opinion, very uſeleſs and frivolous.

WHEN you ſometimes meet with a Tree whoſe Stem has a little Crook or Elbow in it, you may, in planting it, obſerve to turn the Elbow oppoſite to the Sun's Place at Noon, which by this means will be drawn towards it, and rectified; but unleſs it be in this Caſe, you ſhould always turn a Tree that way which will appear the ſtraiteſt in the Line it ſtands in.

THERE may happen another Difficulty proper to be reſolved, which conſiſts in this: When a Deſign is traced out, eſpecially that of a Wood where there are turning Walks, the Trees of which cannot be ranged one by another; you have a great deal of Trouble, after the Hole is made, and the Stake taken away, to plant a Tree without any Line of Range or Meaſure to direct you.

AS an Expedient to rid you of this Trouble, before you dig the Hole, and take away the Stake, ſet four others that ſhall range acroſs the Stake which is to be removed, as you



ſee in this Figure. You ſhould take Care to plant theſe Stakes a little way off the Place where the Hole is to be made, that the Earth may be thrown out without covering them. By this means you may find the Place of your Tree again, ſetting it directly in the Middle of the Hole, ſo that the four Stakes range acroſs and center upon the Tree, as they did upon the Stake you took away.

I THINK this is all that needs to be ſaid touching the Manner of planting the ſeveral Parts of a Garden. Let us now proceed to the Care that ſhould be taken of young Plants, in order to raiſe them well.

CHAP. VII.

Of the Care that ſhould be taken of young Plants to raiſe them well, with the Means of keeping them from the Diſtempers and Inſects that uſually attack them.

IF you are deſirous, in a little while, to take Pleaſure and Satisfaction in the Trees wherewith you have planted your Garden, there is no better Way than to beſtow all neceſſary Care upon them, according to the different Seaſons of the Year: This indeed requires a great deal of Attention, but then your Pains are very agreeably requited, by the Delight you have to ſee your own Work advance apace. Without this, you will have the Vexation to ſee moſt of the Trees in the Garden die and pine away, beſides the conſiderable Charge you muſt be at to replant every Year, without ever being able to enjoy any thing.

THE Care that ought to be taken of young Plants, conſiſts in three Things; in the Tillage, Waterings, and Method of managing them during the firſt two or three Years.

THE moſt neceſſary of all theſe is the Tillage, which muſt be done four times a Year, two greater, and two leſſer, which the *French* call *Binages*, or Turnings up of the Ground a ſecond time. The firſt great Tillage is perform'd at the Entrance of the Winter, the ſecond at the Beginning of Spring. The two leſſer are done, one at Midſummer, and the other in the Month of *Auguſt*.

THE

THE Reason of these different Tillings, and the different Times of performing them, is that at the Entrance of Winter, the Sap not being risen, there is no Danger in giving the Trees a good Tillage, that is to say, in breaking up the Ground pretty deep; for besides that it destroys the Mole-Tracks and Roots of Weeds, it renders it more easy for the Rain and Snow to enter, that fall in this Season, and soak the Ground very deep: This is the first Tillage. As to the second, which is done in the Beginning of the Spring, as in the Month of *March*, you run no Hazard in turning up the Earth some Depth at that Time, when it does not exert itself so vigorously, and is in no Fear of the great Heats as yet.

THE two lesser Tillings, or second Turnings up of the Ground, should not be so deep as the others, because they are performed while the Sap is up, when there might be Danger in digging the Earth too deep, either by giving Vent to the Roots, or by cutting off their Fibers. In these Kinds of Tillage you need only just pare and rake the Surface of the Ground, lest the Heat strike to the very Roots, and no deeper than to kill the Weeds, which in this Season shoot up in abundance, as also to make it penetrable to the Morning Dews and Rains, which very much facilitate the Rise of the Sap.

'TIS a usual Saying, that a Wood to be looked after well should be kept like a Vineyard, where no Weeds are ever suffered.

TREES that are insulate or detached, that is to say, that are not set in a Palisade, a Wood, or a Border, but so as you may walk round about them, should be dug four Foot square, and Palisades two Foot wide on the Back-Part.

IN the greater Tillings, Houghs and Spades are made use of; and in the lesser, Paddle-Staffs, Edging-Irons, and Weeding-Hooks: When the Weeds are too big, you pluck them up by the Roots with your Hands, before you turn up the Ground, which is called *Weeding*.

TO perform this Culture usefully, and to the Purpose, the natural Quality of the Ground should be consulted; for that which would be a very proper Time to till light and dry

dry Ground in, would be no wise fit for strong and moist Earths; thus, as light and dry Earths want Moisture to correct their too great Heat, they should be opened a little before it rains, or presently after, to gain an easy Admittance to the Water, that would be lost elsewhere by too much Delay. On the contrary, strong and moist Grounds are to be turned up in the very hottest Weather, which they are in more want of than Water, and which hinders them also from chapping and cleaving. These Tillings performed in this Manner, and with these Observations, keep the Ground much longer cool, and make it infinitely better for the Plants.

WATERINGS make the second Care that should be taken of young Plants; these, as well as Tillage, helping to dissolve and actuate the Salts of the Earth, which would otherwise remain in a Lump; and if, as was mention'd before in the second Chapter of the first Part, Water be necessary in a Garden, 'tis undoubtedly so for these young Things which would perish and consume away without the Help of it. Waterings ought to be frequent and plentiful; for when small, they only serve to make the Ground dryer, as a Drop of Water thrown into a great Fire does but irritate the Flame the more.

THE most proper Time for Watering, is Morning and Evening; in the Heat of the Day you should water nothing but in Woods and shady Places.

YOU should always observe one Thing before Watering, which is, to cover the Foot of the Trees and Palisades with long Dung and Litter, and to spread it upon the Surface of the Ground, as has been already mention'd. Your Waterings are much better when the Water runs through this Dung as through a Sieve, which makes no Mortar, and causes the Earth to keep its Freshness much longer, being cover'd by the Dung from the scorching Rays of the Sun.

AND because Dung would be an ugly Sight in a fine Walk, you may bury it just within the Ground, and gravel the Walk over it, which will look decent, and be of the same Use to the Tree.

FOR

FOR Places near at hand, Gardeners make uſe of Water-Pots; but when the Water muſt be carried ſome Diſtance off, they fill ſmall Veſſels or Quarter-Casks, and drive them in Wheelbarrows to the Places required; each Tree ſhould have about two Watering-Pots, or two Pails full of Water, as you find the Ground more or leſs thirſty, which you may know by its cleaving aſunder, and drinking up the Water ſpeedily. You may make a hollow Circle, or little Baſon, at the Foot of the Tree, to ſerve as a Tunnel for the Water.

YOU may alſo make uſe of long Wooden Troughs, or Stone Gutters cemented together, to convey the Water from a Baſon or Well, along a Walk, and have Veſſels ſet in the Ground, at proper Diſtances, to receive the Water, from whence it may be taken as Need requires; but this is hardly allowable in a Garden, unleſs it be a Kitchen-Garden.

AS for Paliſades and Rows of young Trees in a Wood, you muſt give them as much Water as they need, hollowing out before-hand a ſmall Gutter the whole Length, to facilitate the Running of the Water.

THE third Care is to guide and prune the young Plants well, which requires no great Skill, and conſiſts, for Example, when you ſee a Tree that has five or ſix Branches, in knowing which ought to be left, to produce, in time, the handſomeſt and the ſtraiteſt Tree.

IT may be held for a general Rule, that a Foreſt-Tree, to be beautiful, ſhould have no more than one upright leading Shoot, which ſhould be very high in the Stem, as from 20 to 30 Foot, without any forked Arms or Branches; after which it may be left to form its Head at Pleaſure. On the contrary, when the Stem of a Tree is too low, the Forks of it are very diſagreeable to the Sight, as well as when the Tree has more than one upright Foot; for then it looks like an Apple-Tree, or like a *Chriſtmas*-Candleſtick twiſted into ſeveral Branches.

Such are the Horſe-Cheſnuts in the great Walk of the Tuilleries, *which have almoſt all this Defect.*

IF the Trees you would manage are headed Trees, you ſhould pick them the firſt Year, taking off with your Hand all the little Buds along the Stem, that the Sap may riſe and reunite itſelf entirely above, to form the new Head. The ſecond Year of their putting out, you ſhould chooſe out of all

all the Branches, that which is the ſtrongeſt and moſt erect with the Foot of the Tree, that is to ſay, which falls moſt perpendicularly upon it, and cut off all the others without reſerve.

IF you find yourſelf puzzled in the Choice of this Branch, and that there is never a one very upright upon the Tree, you may let two of them ſtand to the Year following, and then cut off the leaſt. It ſometimes happens, that you are obliged to leave three Branches upon a Tree, when the middle Shoot, which ſhould be left as moſt upright with the Stem, is found to be the weakeſt of all, and oftentimes to lean of one Side a little. You then lay a Stick acroſs theſe Branches, to confine and keep the middle one in its Place, and peel off the Bark about two Inches broad all round them, at the Place where they ſhoot from the Stock or Bole; this ſtops the Sap, which by this means is convey'd only to the middle Branch. The two other Branches ſhortly die away; and when the middle one is able to ſuſtain itſelf, you cut them off entirely: So that of the three Branches that were left at firſt, there remains only one, which ſhould be very upright.

THE Reaſon why you ſhould leave no more than one Branch to a Tree, is, that it ſhoots the better, becomes larger and handſomer, and grows the faſter: This Branch having all the Nouriſhment and Sap to itſelf, whereas when four or five Branches are left upon the ſame Tree, the Nouriſhment is divided into ſo many Parts, that the Shoots are weaker, and leſs vigorous. I have order'd, in this Manner, ſome topped Elms, that in five or ſix Years time have form'd a handſome ſtrait Head, of 15 or 20 Foot high.

WHEN you plant Trees without cutting off their Head, as thoſe that are in their Clod, you leave only a little Bunch at Top, that the Tree having few Branches to ſupply, the Root may the better nouriſh its Head.

THE beſt way to raiſe and keep Walks of Trees well, is by no means to ſpare two Things: The firſt, is to ſet Poles to each Tree, and bind them together with Oziers, which helps to ſecure them againſt the violent Shocks of Wind, and to carry them up ſtrait and tall; without this, the

Trees are ſubject to be blown down, and their Heads grow crooked, and are very liable to be broke by the Winds. The ſecond, is to make a coarſe Lattice-work of ſmall Rods, tied together with Oziers, to ſuſtain and rear the Paliſades by, which, without this Help, never ſtand upright and well upon their Feet; this is ſome Charge indeed, but is abſolutely indiſpenſable.

As to a young Paliſade, the ſecond Year of its ſhoot, after you have new-furniſh'd the Gaps, take it very cloſe on both Sides, that is to ſay, behind and before, clipping it with Shears, which will make it riſe and grow upright. You muſt never touch a riſing Shoot, by cutting its Head to bring it to the ſame Height with the reſt. 'Tis no Deformity to young Plants, to ſee ſome higher than others. I am very ſenſible I ſhall have a great many Gardeners againſt me in this Point, who will never leave their old way of cutting and butchering Trees perpetually; but I am perſuaded, Men of Senſe, when they have examin'd my Reaſons, will be rather of my Opinion, than theirs, which is founded only upon an ancient and evil Cuſtom.

'TIS no matter for cutting the Head of a young Paliſade, unleſs you intend to make it a Hedge Breaſt-high, or when the Paliſade is grown up to the Height of 20 or 30 Foot; then cutting all to a Level, prevents its becoming unfurniſh'd at Foot, and renders it more regular and beautiful. To keep Paliſades well, Graſs ſhould never be ſuffer'd at the Foot of them, and they ſhould be ſheared and kept cloſe on both Sides, with the Pruning-Hook for the tall ones, and with the Shears for the lower, to keep them from growing out of one Side and the other. You ought never to be ſparing in the Tillage and Watering of them, which is the beſt and ſureſt way to make them grow with Speed.

THE Shrubs of Parterres, as Yews, Hollys, Roſe-Trees, Hony-ſuckles, *&c.* ſhould be dug about and water'd from time to time. They are eaſily molded into Balls and other Figures, by clipping them with Shears; and to keep them well, they ſhould be cut very cloſe, and trimmed two or three times a Year, that they may the better keep the handſome Shape you have brought them to.

IN

IN the Squares of Woods where you would raise Trees to a great Height, you should have an Eye to the young Plants, and after you have let them get a little Strength, trim them with the Pruning-Knife, leaving only one upright Shoot: You may likewise, at proper Distances, leave some of the most ill-shapen Plants without pruning, and make Layers of their Branches for furnishing the Under-Wood.

THE right Time for pruning Trees, is a little before Winter, or in the Beginning of Spring, that the great Wounds you make in them be the less exposed to the Frosts, and that they may recover themselves the more easily.

Lastly, When a Wood is grown to 20 or 30 Foot Height, they make use of a Bill, and get up upon Ladders to lop the useless Branches, with the Precaution to cut them as close as possible to the Trunk of the Tree, and a little sloping, which the *French* call a Deer's-Foot, that the Water may run off from them without rotting the Tree. You must not be concerned at thinning your Wood at first, and destroying a little of the Covert in its younger Years; for, in the End, the Trees will become taller, straiter, and infinitely handsomer.

TO all the Care I have been now speaking of, must be added that too of visiting your Trees from time to time, to heal their Maladies, and to destroy the Insects and Vermin that attack them; the Means of doing which, is what I am next to treat of.

THE Diseases of Trees proceed either from the natural Bottom of Earth, or from their own Defects and bad Constitution, or else from the Attacks made upon them by Animals, Insects and Vermin, which may be truly said to be the professed Enemies of a Garden.

THE Diseases that arise from the natural Bottom of the Earth, are very difficult to be cured; as if the Ground be full of Sand-Stones, or have a Bottom of white Clay. It were to no purpose to change the Ground for three Foot deep throughout, and bring in better in its Room; for when the Roots of the Trees have once reached this bad Bottom, you'll see them languish, turn yellow, and decay Year after Year, and at length die away. There is no

other Remedy in this Caſe, than to avoid making Choice of a Situation where the Ground is ſo ill compoſed.

IF the Soil where you have planted your Trees is too dry, you may help it by baring the Roots of a Tree, and ſupplying it with good new Earth that is very freſh: If, on the contrary, the Soil be too moiſt, you may in like manner lay the Roots bare, and fill the Hole with Horſe-dung a little rotten, which will give Warmth to the Ground.

THE Diſtempers that are cauſed by the bad Conſtitution of Trees, and by their natural Defects, are in a manner incurable; for if the Tree be defective in its Roots, or in its Stem; the beſt you can do is to throw it away, and plant a better in its Place: But if Diſtempers fall upon a Tree after planting, and you ſee it has taken no outward Hurt, you muſt lay it open and examine its Roots, to find if any of them are rotten, or knawn by Vermin; if they are, you muſt cut them to the quick Wood, which will refreſh them, and make them put out new Fibers. Sometimes alſo this proceeds from Careleſneſs in planting a Tree, when all its Roots are not well filled in with Earth, but Cavities or Stones left about ſome of them, which hinders their uniting with the Ground; and makes a Tree ſuffer extremely. You may do this Work at any time, except during the Riſe or Fall of the Sap, and fill the Hole again forthwith with new Earth, for fear the Roots take Wind.

IF the Diſtemper proceeds not from the Roots, but you find them in good Condition, and yet the Tree pines, you muſt then free the Head of ſome Part of its Branches, or water its Head well to revive it, which is a great Relief to it.

YOU ſhould farther obſerve, that in Places where Trees of the ſame Kind have died two or three times one after another, the Species ſhould be changed; the Earth being worn out for this Kind, and becoming new to another; as if ſeveral Elms ſhould die ſucceſſively in the ſame Place, you ſhould put Lime-Trees, Horſe-Cheſnuts, or other Kinds, in their Rooms.

WHEN you have Paliſades to furniſh again, you ſhould obſerve the ſame Thing. So a Paliſade of Horn-beam may be ſucceeded by one of Maple, Beech, or young Elms, for the

the ſame Reaſon; for it is more difficult to make Plants grow in Gaps and dead Places, than in a new Spot.

IF, when you have laid open a Paliſade that is out of order, you find no other Diſtemper in it but Age, or an exhauſted Earth, which often happens, you may remedy it by cutting the Paliſade down to four or five Foot high, or by ſtowing it cloſe with the Hedging-Bill, and bringing the two Sides as near as poſſible to the Maſter-Shoot, which is call'd Plaſhing a Paliſade; this will invigorate it to make new Shoots. You may likewiſe make Trenches on both Sides, at two Foot Diſtance from the Paliſade, for fear of hurting the Roots, and clearing out their bad Earth, fill them up again with the beſt and freſheſt you can poſſibly get.

AS to the Indiſpoſitions that befal Trees by the War that Animals, Inſects and Vermin make upon them, they are not without Remedy.

THE great Enemies to Trees, are Rabbets, Garden-Mice, Moles, Caterpillars, *May*-Bugs, Ants, Cantharides, Snails, Tons, Turks, and abundance of Worms, the Names of which are unknown to us.

THERE are likewiſe other Inſects that attack Fruit-Trees, Flowers and Legumes, as Green-Bugs, Ear-Wigs, Tigers, Lizards, Bud-Cutters, Spiders, Vine-Fretters, Waſps, *&c.* of which I ſhall ſay nothing in this Place, it being no part of my Subject to treat of Fruit-Trees, and what relates to them.

RABBETS deſtroy a Garden entirely; when they have once found a Way into it, they gnaw and nibble the young Woods, Paliſades and Kitchen-Gardens, and cut off all to the very Ground, the reſt preſently dying by the Bite of their Teeth, which is very dangerous. You may keep them out, by ſtopping, with Wire, the Openings of the Walls and Grills by which they enter; and if there are Burrows in the Garden, you muſt deſtroy them by Ferrets, or by ſetting Gins for them, which is a very difficult Work.

THE Garden-Mouſe is an Animal that digs the Earth like a Mole, and deſtroys whatever it meets with within the Ground. They are to be taken with Mouſe-Traps, or other

Snares.

Snares that are laid for them, as Earthen Pans full of Water, ſpread over with Oat-Straw, where they come and are drowned. Theſe Snares are uſually baited with Bits of Bacon, or Cheeſe.

MOLES are Creatures that ſpoil a Garden the moſt of any; for they not only do a great deal of Miſchief to the young Plants, in heaving the Earth, and laying open their Roots, but alſo their Tracks ſpoil the Walks and Green-plots. They may be taken ſeveral Ways; firſt, by caſting into their Holes Boughs of Willow, Hemp, Beets, or Hogs-Dung, which will make them come out; ſecondly, by attacking them after the Gardeners Manner, at ſeveral Hours of the Day, and throwing them out with the Spade, but this is very tedious, and loſes a great deal of time; for upon the leaſt Noiſe heard by the Mole, which is naturally very ſubtle, away ſhe gets. The ſureſt way to catch them, is by Engines in the Form of Boxes, or Caſes, called Mole-Traps, made of Elder-Boughs ſlit in two, and hollowed out. Theſe being about a Foot long, and two Inches Diameter, are join'd together again with a ſmall Ring of Iron, and are ſtopt up at one End, the other being left open for the Mole to come in at, who removes a little Hook, which holds a Spring that lets go immediately, and ſhuts the Mouth of the Trap, and ſo takes the Moles alive. Theſe Traps ſhould be laid about half a Foot deep in the Mole-Tracks.

CATERPILLARS are deſtroy'd by cutting off in the Winter the Leaves to which they ſtick by Cluſters, with Cizars from the low Trees, and from the taller, with Iron-Hooks and Cizars faſten'd to a long Pole, which the *French* call *Echenilloirs*; and when thoſe Bundles of Vermin are down, you muſt burn them immediately. You ſhould make this Search with great Exactneſs, and take the Winter-time for it, becauſe you may then ſee their Cluſters more eaſily, when the Leaves are off the Trees; but do what you can, you will always leave ſome, which are enough to infect a whole Garden.

MAY-

MAY-BUGS are very easy to exterminate, you need only shake the Trees where they stick, spreading a Cloth below to catch them in, and they will all fall down: You should then throw them presently into the Fire, or Water, lest they return. You must not content yourself with only crushing them in the Walks, for the Ground yielding to the Foot, you kill but very few, and the rest soon after fly up to the Trees again. Rain is a great Enemy to these Insects, as well as to Caterpillars.

These are in some Places called Chafers, in others Cock-Chafers.

ANTS, or Emmets, are very injurious to Trees, when once they find the way to them; they are driven away by strewing very fine Saw-dust about the Root of the Tree; for when they find the Saw-dust stir under them, they run away, and are afraid to come near it. Some make use of Vessels full of Water and Honey set at the Foot of the Tree, which drowns them; others anoint the Body of their Trees with Bird-Lime, which hinders them from getting up. There is also another Secret to catch them, which is to throw into the Ant-Hill a Bone half pick'd, which in an instant will be cover'd with a Million of these Insects, and taking it out quick, dip it into Water and drown them; then make use of the Bone again as before, and by doing thus, you entirely ruin them. You may likewise burn them with Straw, or with hot Ashes strewed upon the Ant-Hill.

CANTHARIDES are a Sort of Flies that stick to the Tops of some Trees, especially the Ash. They are destroy'd by pouring or throwing upon the Heads of the Trees, by means of a little Pump or Squirt, Water in which Rue has been boiled.

SNAILS stick to the young Buds of a Tree, and with their Slime do them a great deal of Mischief. They are easily taken with your Hand, if you look for them Morning and Evening, especially after Rain, for then they come out in the greatest Abundance; they should be presently crush'd under Foot.

TONS are great Worms that live in the Ground, and gnaw the Roots of Trees, at the Feet of which you should dig to find them out, and kill them at once. You may then fill up the Hole with new Earth, after having cut the Roots

shorter

ſhorter that were damaged and gnawed by theſe Inſects, which faſten eſpecially upon young Horn-beam.

TURKS are certain white Worms that get into Trees and eat Holes in them, running betwixt the Bark and the Stem of the Tree; 'tis one of the moſt dangerous Inſects, for it not only attacks young Plants, but the biggeſt Foreſt-Trees are not ſecure from them. Theſe Worms ſuck out the Sap, and ſtop it entirely. To deſtroy them, you muſt, without any Loſs of Time, lay the Roots of the Tree bare, and peel off all the Superficies of its Bark, as far as is attacked by theſe Inſects, you then diſcover them in their Holes, out of which you muſt get them, or kill them as they lie, with the Point of an Iron; without this, going naturally higher ſtill, they beſet the Tree ſo ſtrongly, as to kill it the ſecond Year.

THERE are, beſides theſe, other Sorts of Worms that we have no Name for, which faſten only upon the Leaves of Trees, and eat them in Holes like Lace, which are deſtroy'd in the ſame Manner as the others.

BESIDES all theſe Animals and Inſects, Trees have alſo other Diſtempers, as Cankers, Moſs, and Putrefying.

CANKERS are taken off with the Point of a Knife, cutting away all the Part affected, and applying Cow-dung to the Wound, kept on by a Linnen Rag tied about the Tree with a String.

MOSS is extremely hurtful to Trees, being a kind of Scurf that hinders their Growth and Beauty. To remove it, you muſt ſcrape the Stem of the Tree with wooden Scrapers, or rub it with ſtiff Bruſhes, or a Wiſp of Straw. This Work ſhould always be done after Rain, for then the Moſs comes off more eaſily than in a dry time; for in rubbing it too hard you may chance to peel off the Bark.

AS to Putrefaction, if it ſeize any Part of a Tree, whether Roots or Branch, there is no other way but to cut and trim it to the Quick; by which means the Sap will convey itſelf to the Place again, and nouriſh and ſtrengthen it anew.

CHAP.

CHAP. VIII.

Of Nurseries, and the Care that should be taken of them; with the Manner of raising from Seed all the Plants that are made use of in Pleasure-Gardens.

THIS Chapter will appear none of the least useful in this Treatise, if we consider the Expence a Nursery saves, or the Convenience it constantly affords its Master. One Sign of its Usefulness is, that all great Houses are ordinarily provided with them, as things perfectly necessary and indispensable in Gardens of great Extent.

ONE great Advantage of a Nursery is, that when any Tree dies in a Garden, you may pick one out of your own Ground to supply its Place, without being obliged to seek Abroad, sometimes a great way off, and withal to buy dear; besides, Trees take better, and grow more beautiful, when they are raised in the same Ground, the Roots not having time to take Air and dry in the Space that a Tree is taking up and replanting, when done so immediately.

'TIS an Accident too often happens to Trees that come from far, that the Roots lose their Spirits, or are frozen and suffer much in transporting; which occasions the Death of most young Plants.

NURSERIES are ordinarily set in By-places, as at the End of a Park, or the like. 'Tis not but that, with Care, they may be made agreeable enough to Sight, and that 'tis,

at least, as pleasant to look upon a Nursery, as it is to see a Kitchen-Garden, or an Orchard; but as Nurseries permit no Alleys to be made in them for Walking, and that there is no treading upon them without spoiling the Tillage, 'tis enough that they satisfy the Sight only, and that being of no Service for walking in, they are planted so out of the way.

IN point of a Nursery, you can never have too much of it; that is, you should always have rather more than less than you can have occasion for, one, two, or three Squares, according to the Size of your Garden: If you have any thing to spare at last, you may easily find ways to dispose of it.

THE Place design'd for a Nursery being pitch'd upon, and traced out upon the Ground, you must prepare it in this manner: First, examine if the Earth be good, and if it has the Depth required, according to what has been already treated of at large, in the second Chapter of the first Part, to which I refer you, to avoid Repetition. As 'tis possible the Earth may not be good, and yet that it may be difficult to alter the Situation of the Nursery, you must do all you can to mend it. If the Ground be exhausted, you must have better brought in; if it be too lean, it must be dunged; and if it be stony, you must break it up, and have the Stones taken out, passing the Earth through the Screen. These Observations and Amendments ought never to be omitted; for without them, all the Seed and young Plants you set in a Nursery, will languish, and never thrive so as to make tall and beautiful Trees, fit to fill up one day the dead Places of your Garden.

SUPPOSING then that the Ground be thus meliorated, as shall be found necessary, you must give it one Tillage to lay it eaven, and to prepare it to receive the Plants; then mark out Rills at every two Foot distance, straining the Line from End to End, and opening the Rills a Spit deep, that is, about half a Foot.

THEN sow your Seeds in these Rills, and cover them over with Earth, taking care not to tread upon them. If you have Fruit, as Acorns, Horse-Chesnuts, common Chesnuts,

nuts, *&c.* you may, without opening Rills by the Line, make a Hole with the Setting-Stick at every Foot diſtance, and throw a Nut or Acorn into it; after which, you fill up the Hole again, by turning the Earth into it with the ſame Setting-Stick; which is called pricking Fruit into the Ground. This way of Planting makes great Diſpatch, and yet is very good. If you don't like to make uſe of it for Fruit, you may open Rills, and ſow it in them as you do Seed.

YOU ſhould always take this ſmall, but uſeful Caution, to fix little Sticks at the Ends of every Rill, or Trench, that you may find the Rows of your Plantation again, and be able to diſtinguiſh it from the Graſs, when you come to weed the Nurſery, or to give it an After-Tillage.

THE right way to have a fine Nurſery, is to keep it in good Order; this requires ſome Care and Attendance, I own; but the great Advantage you will, one day, make of it, ſhould induce you to overlook the preſent Trouble. Graſs ſhould never be ſuffered in it; ſo that the Ground ſhould be turned up four times a Year, and weeded as often as any Graſs appears.

TO know the moſt proper Seaſons for this Tillage, I refer you to the foregoing Chapter, where is taught the Method of keeping Groves. In great Droughts, you muſt beſtow a little Water to comfort the young Plants, which are too tender and weak of themſelves to withſtand the violent Heat of the Sun.

IT muſt be obſerved, that the Plants which riſe from Seed promiſcuouſly ſown in Rills, ſhould be taken up the ſecond Year, and be replanted a Foot one from another, in other Trenches; without this, they will grow too thick, hurt one another; and you will not be able to draw then, conveniently, when you want them.

TRANSPLANTING of theſe Trees may be compared to what the *French* call *Bâtardiere*, in the caſe of Fruit-Trees, which are drawn at two Years end out of the Nurſery, to be replanted and raiſed in the * *Bâtardiere*: However, I would adviſe one thing, in caſe you would beſtow the Pains, that when your Plantation has got ſome Strength, as the ſecond Year, you would thin, and unfurniſh it, by

* *A Place where young Trees are ſet, to be afterwards removed.*

pulling up ſeveral ſmall Plants from between thoſe that are ſtronger, ſo that they may be at leaſt a Foot aſunder. Before you ſet about this Work, the Nurſery ſhould be weeded, that you may better diſtinguiſh the Plants. This is doubtleſs a great deal of Trouble; but thus your Plants will not be taken up the ſecond Year to be replanted elſewhere, and will thrive better, having already taken Root.

IF you would raiſe a Nurſery in little time, inſtead of ſowing, you muſt plant it all at once, with Plants that have already taken Root, and are ſomewhat ſtrong. This will be no great Expence, a thouſand of theſe young Plants coſting no great Matter. You gain, by this means, the two Years the Seed takes up to raiſe and form the like Plants; and you are not obliged to take them up again two Years after, to replant them in other Places, or to be at the Trouble of thinning them, as was juſt now mention'd. This is indeed the beſt way of planting a Nurſery, and that which I always make Uſe of myſelf.

IF you have then the Conveniency of getting young Plants, as Elms, Cheſnuts, Lime-Trees, Horſe-Cheſnuts, *&c.* open Trenches at every two Foot, and ſet your Plants in them by the Line, at a Foot Diſtance one from another, and no more; for the nearer the Plants are together, the better they guide one another. Then cover the Trenches again and ſettle the Ground about the Plants, leſt the Roots take Wind. You muſt take great Care not to cut your Plantation down to the Ground, as many People do. 'Tis a very ill Cuſtom; all that you need to do is only to trim the Roots of the Plants, by cutting off the ſmall Ends of them.

WHEN your Plants are grown pretty ſtrong in your Nurſery, as to be three or four Year old, you muſt begin to manage and bring them up in this Manner. Prune off all your little Buds and Twigs along the Stem to the Top, and pick out among all the Branches, that which is moſt upright upon the Foot of the Tree; then, without cutting any thing, break the End of the uſeleſs Branches, and twiſt them about the good one, ſo that they may ſerve to keep and direct it as Need requires. When theſe twiſting Branches are bigger

bigger than that you would raiſe, for fear they ſhould take away all the Sap, you muſt peel them all round, about three Fingers high, which will ſtop their Nouriſhment.

THUS you are every Year to guide the leading Shoot of theſe young Trees higher and higher, looking out new Branches to wind round them and keep them upright, and pruning off, with the Knife, all thoſe that are below to the very Foot. By this means you will make your young Plants grow tall and ſtrait, and have the Pleaſure of ſeeing them one Day very fine Trees; provided, as was ſaid in the foregoing Chapter, you leave them no more than one leading Shoot.

WHEN in a Nurſery there are any Trees that lean of one Side, they muſt be ſet upright again, by carrying them over and twiſting them ſo with thoſe that are near, that they may ſuſtain and keep one another to rights as they grow. The Time of the Riſe of the Sap is the moſt proper for this Work, Trees then bending more eaſily, without being ſubject to break.

THESE Trees having reached the Age of ſix or ſeven Years, and being grown to about five or ſix Inches thick, and between fifteen and twenty Foot high, are then in a Condition to be ſet in the Garden, if there be Occaſion to new furniſh any vacant Places. They ſhould not be drawn ſo ſoon from the Nurſery, as to loſe the Time of their thriving, and becoming beautiful; and when you would take up any, they ſhould be raiſed with their Clod in the following Manner.

AFTER having pitch'd upon the Trees you would take from the Nurſery, and marked them with Ozier-Twigs or Straw, lay them open all round, leaving a Ring or Clod of Earth at the Foot of the Tree. You ſhould take Care not to hurt the Roots, nor give the Clod any great Shake, for fear it tumble in Pieces; for which Reaſon you ſhould ſet very expert Gardeners about this Work, leſt in raiſing one Tree, they ſpoil two or three round about it, which will ſoon ruin a Nurſery. Theſe Trees are not hard to raiſe, their Roots lying almoſt eaven with the Ground.

To raiſe Trees in their Clod with Succeſs, you ſhould obſerve if the Earth has naturally ſomething of a Body and Tenacity in it, as ſtrong Earths have; if ſo, you may raiſe them either at the Beginning of the Spring, or before Winter, 'tis no matter which; the Earth will hang together alike in either of thoſe two Seaſons. But if the Earth be too light and moveable, which the *French* call *Veule*, that is, if it have no Binding Quality in it, as looſe ſandy Ground, you muſt uſe ſome Caution in the Performance: And becauſe the Earth cannot hold itſelf together to form the Clod we are ſpeaking of, you ſhould lay open the Tree before the Froſts come, making a Clod of Earth about the Foot of it, and leave it thus without raiſing it, till the ſevere Froſts taking the Lump harden it ſo, that you may remove the Tree without fear of breaking the Clod. This Work ought to be done before Winter, becauſe of the Froſt, theſe Sorts of Trees not permitting it to be done in the Beginning of the Spring.

If the Clods of your Trees are three or four Foot in Compaſs, which often happens when the Trees are vigorous, you ſhould put them into Baskets made on purpoſe: Without theſe it would be very difficult to carry the Trees to their deſigned Place, without running the Hazard of ſpoiling the Earth of the Clod.

Before you raiſe a Tree from the Nurſery, you ought to prepare the Place where you would plant it, making a Hole for it of a Size and Depth proportionable to its Strength. If the Tree be not of an extraordinary Size, nor of too full a Head, two Men will eaſily carry it upon a Colt-Staff, or Hand-Barrow, while a third ſupports it, and keeps it upright with his Hands; but if your Tree ſhould be very big, the Clod of great Compaſs, and the Head large and well furniſh'd, as are the great Trees planted in the Royal Gardens; you muſt have a Machine on purpoſe to remove them, which is a Kind of Skid or Sledge, upon which the Tree is ſet a little leaning, and ſupported at the Head, for fear the Branches ſhould break. This Machine is drawn by two Horſes, or more, if there be Occaſion.

I SHALL

I SHALL say nothing of the Manner of planting these Trees, having sufficiently enlarged upon that Subject in the sixth Chapter of this Part. I proceed now to the Seed and Fruit of Trees proper for Pleasure-Gardens, shewing the Time they should be gather'd in, how to know their Goodness, how to keep them in the Winter, and what is the fittest Season for sowing them in the Nursery.

WE have several Kinds of Seeds, as that of the Elm, Lime, Sycomore, Ash, Horn-beam, Maple, and Birch, which produce Trees of the same Name, and are the most made Use of in our Gardens.

BESIDES which, there are five Sorts of Trees; the Acorn, the *Marron, the Chesnut, Beech-Mast, and the small Nut, which produce the Oak, the Horse-Chesnut Tree, the Chesnut-Tree, the Beech, and the Hasel or Filberd-Tree. All these Seeds and Fruits should be gather'd in the Months of *October*, *November*, and *December*, except the Seed of the Elm, which is to be gather'd in the Beginning of the Spring.

** Fruit of the Horse-Chesnut Tree.*

TO know if your Seed has the Qualities required in it to be good, examine if it be large, round, full within, and of a brisk and lively Green. It ought to be fresh, and of the same Year you intend to sow it in. These are the surest Signs of its Goodness. On the contrary, if the Seed be flat, hollow within, and look oldish, and of a faded Green, it is worth nothing at all for sowing, and will never come up, being incapable of Vegetation, and of acting according to the Order of Nature.

AS to the five Kinds of Fruit, which are, the Acorn, Marron, Chesnut, Beech-Mast, and small Nut, you may know them thus: The Acorn should be smooth and large, not shrivel'd, nor with Holes in it. The Marron and the Chesnut ought to be large and full, not subject to scale and peel off. For the Beech-Mast and small Nut you should choose them bright, smooth, without Holes in them, and not knawed by the Mice. All these Fruits should be of the same Year you design to sow them in.

I SHALL mention here by the way, one Thing concerning the Acorn; which is, that you should sow it at once in your

your Woods, without a previous ſetting of it in the Nurſery, the Oak being in its own Nature very difficult to take again, by reaſon of its Tap-Root; yet, if you have one in the Nurſery that you would replant, you muſt be ſure not to cut off the Tap-Root of it, becauſe the Oak never thrives ſo well afterwards, and puts out nothing but weak and miſhapen Branches.

THE moſt proper Seaſon for ſowing the Seed and Fruit I am ſpeaking of, is the latter End of *February*, or the Beginning of *March*. This Time of the Year is more favourable to the Seed than the Beginning of the Winter, when 'tis expoſed to divers Accidents, as to rot and grow mouldy with the too great Moiſture of the Seaſon, to be frozen by the hard Froſts that pierce very deep into the Ground, or to be eaten by the Birds and Mice that dig it up again. Theſe are ſufficient Reaſons why you ſhould ſow your Seed rather at the Beginning of the Spring, than at the End of Autumn; and, I think, nothing can be objected againſt following this Method, but the Difficulty of keeping it in the Winter, which I am going to explain immediately.

WHEN you intend to ſow, you ſhould do it in mild Weather, not windy, but ſuch as promiſes Rain in a little time, that the Ground may be ſettled which has received the Seed, and that the Water may facilitate its Shooting up the ſooner. You never need to ſtay for the Full or Decreaſe of the Moon for Sowing; this, however it has obtain'd, being no more than a meer Notion, and an old Woman's Tale; Experience has ſhown us, 'tis nothing but an idle Conceit, and ſuch as ought to be entirely rejected.

AS to the Manner of keeping your Seed in the Winter, you ſhould chooſe a dry Place for it, as a Granary, or the like, where you ſhould ſpread it abroad, and take Care to look upon it from Time to Time, and to ſtir it as you do Corn. Seed will not endure to be put into Sacks, or Binns, for it will either grow mouldy, or be ſo over-heated, as to be good for nothing for the Purpoſe of ſowing.

FRUITS, as the Acorn, Cheſnut, *&c.* are kept in quite another Manner. Take ſeveral large Baskets, at the Bottom of which lay a little Sand, and then put in a Lay of Fruit, ſuppoſe

ſuppoſe of Cheſnuts, and then another Lay of Sand, and ſo till you have filled up the Baskets, covering them with Sand at Top. Fruit put up in this Manner will keep without ſpoiling, and ſprout in the Sand during the Winter, provided, as I ſaid before, it be ſet in a dry Place, and ſomewhat warm, if ſuch can be had.

YOU may carry theſe Baskets, without opening the Lays, into the Place you deſign to plant in; and be careful, when you take out the Fruit for planting, not to break off the Shoot they have made in the Sand, which would much retard their Growth.

I MUST not here forget to ſpeak of Ever-Greens, which are indeed in very great Eſteem, and extremely neceſſary in fine Gardens.

THE Yew, the Picea, and the Holly, are the moſt conſiderable of all Ever-Greens, and are thoſe that are moſt made Uſe of. They yield a ſmall red Berry, which is gather'd when ripe, and is ſown in the ſame Manner as the other Seeds I have been ſpeaking of: All the Difference is, that theſe Berries are much longer a raiſing, eſpecially the Yew, which is very backward; upon which account they require a better Earth, ſuch as you provide for Flower-Beds and Orange-Trees. And as Ever-Greens naturally love the warm Countries from whence they are brought, they are very difficult and tedious to raiſe in our Climate, that has nothing near the ſame Degree of Heat, and where they can have nothing but the Excellence of the Soil to forward them.

IF Seed of this Kind be ſown in ordinary Ground, where you make Nurſeries of other Trees, it will be very difficult to raiſe, and the Greens that come up will be a great while before they are in a Condition to be ſet in your Gardens, and to afford you any Delight and Satisfaction. You may, if you pleaſe, make diſtinct Beds of them, like thoſe of a Kitchen-Garden.

WHEN the Seeds of theſe are come up, you ſhould be very careful to keep the Plants clean from Weeds, to turn up the Ground about them, and to water them often. The Yew and the Holly are the longeſt a growing; the Picea comes up much faſter.

BOX likewise is a Shrub very much in Use, and which you cannot well make Shift without in a Garden, it being equally fit for Parterres and Palisades. It is to be raised from Seed which should be sown in good Earth; but the Way to have it readily, is to slip it off from old Stocks of Box, and to replant it, burying it almost entirely in the Ground, which makes it shoot out again at the Neck; and by this means you are furnish'd with fine young Box, cutting away the Roots and Fibres of the old.

AS to the Cypress, Pine, Fir-Tree, and Scarlet-Oak, their Fruit is to be gather'd in Season, and sown after the usual Manner, still observing that it be in the best Ground, and be very carefully looked after; Trees of this Kind being always much more tedious and hard to raise, than others.

WHEN your Ever-green Trees and Shrubs are got to some Height, you may then begin to shape them at your Pleasure, clipping them with the Shears into Balls, Pyramids, *&c.*

IF you would not be at the Trouble of sowing this Seed, nor wait so long as to see it raised, you may make Layers from the Foot of any large Yews or Piceas that you have, which will do very well; for at two Years end you may take up your Layers very well rooted, and plant them in your Nursery, which gains a great deal of Time. I have explained, in the fifth Chapter aforegoing, what is meant by laying Layers. You may likewise buy young Plants of this Sort, and raise them in your Nursery by themselves.

OTHER Ever-Greens, as the Phillyrea, Juniper, Alaternus, Savine, Pyracantha, *&c.* are raised after the same Manner as the foregoing, but grow much faster.

CHAP. IX.

Of ſearching for Water, and the different Ways of conveying it into Gardens.

AS the Neceſſity of having Water in a Garden is altogether indiſpenſable, as was mention'd in the ſecond Chapter of the firſt Part, it will not be foreign to my Purpoſe to ſpeak of it in this Treatiſe, as briefly as ſo copious a Subject will poſſibly permit, which alone requires a particular Volume.

THE Water of Fountains and Baſons comes either from the natural Springs, or from Machines that raiſe the Water. I ſhall ſpeak, firſt of all, of Springs, and the Manner of diſcovering them.

IF you are near any Mountain, or Hill, you are almoſt ſure of finding Springs, unleſs it be in a very dry and ſtony Country. Examine, firſt of all, what Sort of Herbs cover the Ground; and if you find Reed, Creſſes, wild Balm, Silver-Weed, Bull-Ruſhes, and other aquatick Herbs, 'tis a certain Sign there is Water thereabouts, provided theſe grow of themſelves, and that they are of a fine deep Green. You may likewiſe conſult the Colour of the Earth, for if it be Greeniſh, or inclining to White, as ſome clayey Grounds are, there is aſſuredly Water in it.

YOU may likewiſe diſcover hidden Springs, by lying with your Belly to the Ground, and hold up your Head, look along the Surface of the Earth; if you ſee any moiſt Vapours riſe in Waves from any Place, you may dig there, with ſome Aſſurance of finding Water. Vitruvius, *L.* 8. *Chap.* 1. Fa. Kircker Mundus Subterraneus.

Cassiodorus.

The Art of Fountains, by Fa. Jean Francois, *Jesuite.*

Palladius.

SOME say, that Swarms of small Flies pitching upon the Ground about one and the same Place, are certain Signs that there is Water in it; others advise, to bore the Earth with long Iron Awgers, that by what is brought up in them, you may judge of what is contain'd under Ground.

YOU should observe the Places where these Herbs are, and where you find Vapours rise, to see if they be not moist upon their Surface, as a Marsh is; for it would be to no purpose to dig there, since such Waters issue not from Springs, and are no more than a Collection of Rain-Water, and the Meltings of Snow. People have been a long time deluded by certain Persons, who pretend to find out Water by the Help of a Hasel-Wand, called a *Divining-Stick*, which is a ridiculous Piece of Folly; nevertheless it has had, and still has its Followers, though but few.

THERE are likewise many other Ways of searching out Springs, but I pass them over in Silence, as well as several Observations I have made upon the Origine of Fountains, upon Water-Engines, upon the Leveling and Gaging of Waters, which would carry me too far from my present Purpose. If this Work find Acceptance with the Publick, I may possibly communicate them in a second Edition.

THE Search for Water is usually made in the Months of *August*, *September*, and *October*, because at that Time the Earth being wholly discharged of its Moisture, is very dry, and all the Water that is then found, may be properly call'd a Spring.

SUPPOSE then that you have found Water in several Parts of a Hill, let Wells be made at convenient Distances, as well to know the Quantity of Water, as to discover the Depth to the Bed of Clay or Sand-Stone that holds it, which Bed should never be pierced through, for fear of losing the Spring. Seek always for the highest Places, that you may take the Spring at its Head, and that the Water coming from aloft, may rise the higher in your Gardens. You should make a Communication between one Well and another, by Drains; and choosing a Spot of Ground that is somewhat flat, join all your Water together in a * Reserver, or Conservatory, from whence you may lead it, by Pipes, to the

* Fr. Reservoir.

the Places designed for your Fountains and Water-Spouts: And to know what Height these Spouts will rise to, that issue from the Place where you make your Reserver, you may level the Hill according to the following Practice.

I SHALL only shew here the Use of a Level, commonly called the Level with Vials, which is the most exact and plainest that is.

'TIS a Pipe of Tin, about an Inch diameter, and three or four Foot long, as *AA*, *Fig.* 1. strengthen'd in the Middle by the Iron Braces *BB*, and by the Socket *C*, which serves to fix it upon a Stake when you have Occasion to make use of it. Upon the upper Part of this Pipe, at the two Ends, and in the Middle, are solder'd three other Ends of Pipe, which communicate one with the other, as *DEF*, and in each of these are put the Vials of Glass *ghi*, almost of the same Diameter, which are open at both Ends, and are joined to the Pipes with Wax or Mastick, so that the Water rises into the Vials, without losing itself any where.

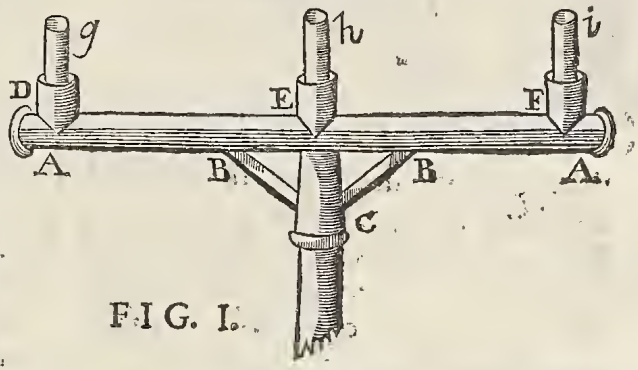


FIG. I.

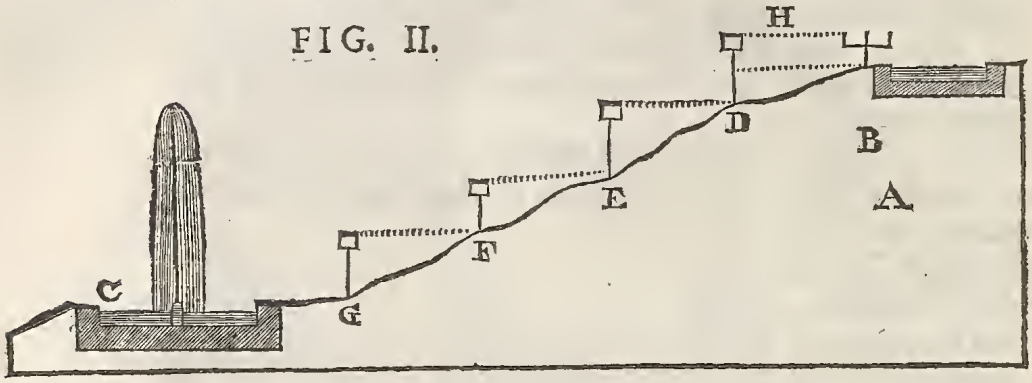
THE Perfection that has been lately given this Instrument, is, that the Middle Pipe *E*, which is additional, being out of the Range of those two at the Ends *D* and *F*; and being set of one Side about the sixth Part of an Inch, serves instead of Sights, and directs the Visual-Ray much better.

TO come to the Use of this Level, suppose the Hill *A*, *Fig.* 2. following, to have on the Top of it a Collection of Water in the Reserver *B*, which you would carry to the Bottom of the Hill, as *C*, to play a Fountain there. This is the way to level the Hill.

SET the Level at the Top of the Hill *A*, near the Edge of the Reserver *B*, as upright as possible, and direct it to the

the Side where you would make your Leveling. Then take Water, which you may mix with a little Claret Vinegar to discolour it, that it may be distinguished the far-

FIG. II.



ther, and fill the Pipe, so that the Water coming up into the three Vials, there may remain a little Vacancy at Top. Let the Instrument rest till the Water has done floating, and be careful to cover the Mouths of the Vials with Paper, lest the Wind should cause any Agitation of the Water. Then take a long Pole, upon the End of which is fixed a very square Piece of white Pastboard, and cause a Man to hold it at some Distance from the Level, as at *D*, making him raise or lower it, till the Top of the Pastboard be exactly in the Line of Aim *H*, which is directed in this Manner. Placing yourself at some Distance from the Level, set your Eye, and bourn by the Surface of the Liquor contained in the three Vials, which will guide your Visual-Ray, according to which you adjust the Pole to its right Height. This done, take the Height from the Superficies of the Water in the Reserver *B*, to the Liquor contained in the Vials, and mark it downwards upon the Pole, the Length of which is to be reckon'd only from this Mark, to the Level of the Place where it is fixed. You should have a Paper, upon which to set down this first Station of your Leveling, and the others that follow. Let the Pole be removed, and at *D*, where the Foot of it stood, set the Level, and fix it as you did before, for a second Operation; and so by several Stations, from *D* to *E*, from *E* to *F*, and from *F* to *G*, you come to the Place *C*, where the Spouting Fountain is to be. Then

cast

cast up all the Measures noted down upon your Paper at each Station, and adding them together you have the Total, and know exactly what Fall there is from the Top of the Hill *B*, to the Bottom *C*, and how many Foot the Spout of Water will rise, the Water always rising near as high as its Head.

THE Force and Height of a Water-Spout, may diminish about a Foot in a hundred Fathom; that is, the nearer the Spouts are to the Reservers, the higher they rise.

THE natural Water not being to be found in a flat and dry Country, you must have Recourse to Water-Engines, which raise it from the Bottom of Wells, into receiving Cisterns and high Places, for the Purpose of carrying it afterwards down into the Gardens.

THESE Engines are much in Use at present, and many People preferr them to the natural Heads, with regard to the Quantity of Water they supply, and to the Nearness of the Reservers and Pipes, which cost infinitely less than when the Water is convey'd for a League together; add to this, that they bring the Spring into the House, which spares the continual Grief of seeing the Conduit-Pipes broke by the Malice of Country Fellows, who take Delight in any thing that will mortify a Gentleman. Nor are you under any Apprehension of having your Water cut off and diverted, which frequently occasions tedious Suits at Law; or lastly, that the Vein of Earth and Bed of Clay should change its Situation, and deprive you entirely of the Benefit of the Springs.

The Art of Fountains, by Father J. Francois, *p.* 120.

WATER may be raised by divers Engines: First, by the Force of Hand and Horse-Pumps. Secondly, by making use of the two Elements, Air and Water, for the turning of Mills.

HAND-PUMPS, that is to say, such as are moved by the Strength of a Man's Arm, are the meanest Engines, in respect of the small Quantity of Water they furnish, and the Fatigue a Man must have to lift up his Arms incessantly, to make the Balance swing. So that they are made use of only to get a little Water for watering a Garden, or to supply the Cisterns and Troughs of the Kitchen and Stables; whereas

whereas the Pumps that are worked by a Horse are of very great Benefit, and furnish a great deal of Water in a little Time. There are some Pumps afford more Water in one Hour's time, than a Spring will bring in in four Hours, which is a material Point; besides the Advantage they have, that you may set them in every Well in your Ground.

PUMPS are distinguish'd into two Sorts, that which forces the Water, and that which attracts it; the Difference of which is sufficiently known to every one.

THE second way, of raising Water by Mills that go with the Help of the Wind or Water, is infinitely the best; these Engines furnishing you almost continually with Water, and as one may say, Day and Night; but they are also a much more considerable Expence, and are not proper for every Situation.

YOU must be near some River, or Brook, to be served by Water-Mills, which in their outside Form resemble Corn-Mills, and differ only in the Composition of their Inside. There are some of these Mills that grind Corn, and raise Water when you please, by taking off the Handle, but in Places far distant from Rivers and Streams, as those seated upon some Hills may be, Wind-Mills do extremely well, the Wind seldom failing in such sort of Situations. These Mills are also very like the ordinary Wind-Mills; but they have a greater Conveniency, which is that of turning themselves to the Wind, by means of a Tail in Form of a Ship's Rudder, which turns about every way. These are a little more rare than Water-Mills, having been put in Execution in three or four Places only*; however, the Excellence and good Success of them, may very well warrant any private Gentleman's making the like.

ONE may say in general, that almost all Water-Engines are reducible to the † Bucket and Sucker, and that they have great Conformity with those of the Ancients, especially that of *Ctesibius*, of which *Vitruvius* makes Mention.

AFTER having spoken of the Means of finding out Springs, and raising Water, 'tis necessary to say somewhat touching Reservers, before I proceed to the Manner of conveying it.

* Versailles, Marly, Meudon, *and near the Village of* Argenteüil.

† Piston *is the short Cilinder of Brass or other Metal, which is moved up and down in the Barrel of the Pump, and by us call'd the* Bucket.

L. X. *C.* 12.

RESER-

RESERVERS may be distinguish'd into two Sorts, those that are made upon the Ground, and those that are raised aloft in the Air.

THE Reservers that are upon the Ground, are ordinarily Basons of Water, or Canals done over with Clay, where the Springs are collected, and which hold many thousand Hogsheads of Water. They are usually made pretty deep, as well that they may hold the more Water, and not empty themselves so soon, as to add the greater Weight to the Water in Pipes, and throw the Spouts the higher. When you can place them in your Park, and within your own Bounds, 'tis certainly best; but when that can't be done, you may make them without in the Fields, inclosing them with Walls. In Gardens that are sloping, the Basons above serve for Reservers to the Water-works below, which is a great Advantage.

THE Reservers that are raised aloft, are nothing near so large and capacious, the biggest holding no more than five or six hundred Hogsheads of Water, and are very seldom of this Size. They generally contain no more than a hundred or two hundred Hogsheads. The Difficulty of sustaining them, and the Charge of Lead they are cover'd with, doth not permit to make them so big as those that are upon the Ground. They are set up upon Arches, or Pillars of Free-stone, upon which are laid great Scantlings of Timber-work framed together, to support the Bottom and Sides, which should be carefully lined with thick Sheets of Lead soldered together. The Foundations and Timber-work of these Reservers ought to be very substantial, to be able to sustain the great Weight of Water.

THERE are more of these raised Reservers to be seen than of the others, because those that have Water-Engines can scarcely build any others, by reason of the flat Situation of their Ground.

THE next Thing I am to speak to, is that of conveying the Water from these Reservers, to the Basons for the playing of Jets, * Water-Spouts, and Cascades.

* Boüillons d'Eau *are such Spouts as throw the Water but a very little Height.*

THE Ancients had three Ways of carrying Water, by Aqueducts under Ground, by Pipes of Lead, and by Pipes of Earth or Potter's-Ware, which are still very much in Use, and to these we have added but two, which are Wooden-Pipes, and those of Iron.

Vitruvius, *L.* viii. *C.* 7.

SUBTERRANEOUS Aqueducts ought to be well built with Free-stone, and cover'd over with arched Vaulting, or flat Stones, which the *French* call * *Dalles*, that the Sun may not affect the Water: If you meet with a Rock, the Vault may be cut out of it; and if some Hill prevent the Passage, you must pierce through it, or carry the Aqueduct round about, making Vent-Holes at every 50 Fathom, to give the Water a little Air. The Bottoms and Valleys, called *Ventres* by the *French*, which interrupt the Level of the Conduit, should be filled up with Rubble-Work, and solid Walls of Masonry, or with Arches and Peers, as is done in the Aqueduct of *Arcueil*.

* Dalles *are any thin hard Stones which are used in* France *to cover Terrasses, Balconies*, &c.

THE Water is conveyed through these Aqueducts several ways; in Pipes of Earth or Lead; in Channel-Stones of Masonry, which is the most ordinary; or in Gutters made of Lime and Mortar; or of Clay, in Countries where it is plenty. Sometimes you meet with natural Veins of Gravel, or Sand-Stone, upon which the Water will run without losing itself. Two small Paths should always be made upon the Sides of these Troughs or Channels, that you may go in, and walk along them when it is necessary; and besides this, a small insensible Fall should be given these Channels, to add a quicker Current to the Water.

THESE Sorts of Aqueducts are proper only for collecting of Springs, and carrying them into a Reserver; for the Water not being confined, as it is in Pipes, loses its Fall, and the Force it should have to throw it up into the Air.

Pipes of Lead are the most convenient for conveying of Water. You may sink them down, raise them up, or turn them aside, without any Prejudice to the Water that runs in them. Of these there are two Sorts, the Mould-Pipes, and the Solder'd. The first are cast in a Mould, of what Length you please, usually about twelve Foot long; they are made thicker than the Solder'd-Pipes, for fear of blowing, so that they

they are the beſt, and moſt eſteemed; but they coſt more by reaſon of their Weight. Solder'd-Pipes are no other than Pieces of Sheet-Lead turned up, and ſolder'd at the Joint. The biggeſt leaden Pipes rarely exceed ſix Inches diameter, and are fixed one to another with Joints of Solder. They are ſubject to burſt, and to waſte in Ground that is full of Chalk.

PIPES of Earth, or Potter's-Clay, which was the third Way of carrying Water among the Ancients, is that which coſts leaſt, but requires the moſt Repair. Theſe Pipes are a Compoſition of burnt Earth, like that of which Pots and Pans are made. The ſeveral Lengths, which are generally two or three Foot long, run one into another; and the Joint, which is made with a Hem, or Collar, is ſecured with Maſtick and Hemp. When theſe Pipes are made uſe of to convey Water that is forced, they are environ'd with a ſolid Body of Ciment five or ſix Inches thick, which preſerves them ſome Time, provided you firſt take the Precaution, to let the Conduit dry ſome Months before you lay the Water into it, that the Mortar may have Time to harden; and, ſecondly, to ſecure the Pipes, which are very brittle, upon ſolid Beds and Foundations of Maſonry, for fear they ſink with the Weight. Theſe Pipes are more proper to carry off the waſte Water of Baſons, than that which is to ſpout aloft, which they can hardly reſiſt any long Time. They are ſubject to Fox-Tails, which are the Roots of very ſmall Trees, which paſſing by the Pores of the Earthen Pipe, or by the Joints of Maſtick that rot in the Ground, live in the Water, and grow to ſuch Length and Bigneſs, as to ſtop up the Pipe entirely. I have found ſome of them five or ſix Fathom long. Some will have it, that theſe Fox-Tails come from the Hemp that is wrapt about the Joints of Maſtick, or elſe from certain Seeds that enter the Conduit with the Water.

Architecture Francoiſe de Savot, *Chap.* xxx. *P.* 191.

EARTHEN Pipes have a peculiar Excellence, for Fountains of Drinking-Water, That being glazed on the Inſide, no mud or Slime ſticks to them, and the Water keeps better and freſher than in other Pipes; beſides that, it gets no ill

Quality in passing through them, as it does in Lead and Iron.

THE two Ways of carrying Water, that we have added to those of the Ancients, are by Pipes of Wood, and of Iron.

TO make Wooden Pipes, you take great Trees, as Oak, Elm, or Alder, the straitest you can get, and bore Holes through them, of three or four Inches diameter. They are sharpen'd at one End, and are ferriled and girdled with Iron at the other, which serves for jointing them one into another, and these Joints are cover'd over with Pitch. These Sorts of Pipes are good only in Countries that are naturally damp and marshy, for in dry Ground they quickly rot. The Water that runs through them is reddish, and has always some Taste of the Wood.

The Waters of Liencourt *are carried in nothing but Wood.*

IRON Pipes are cast in a Mould, and are very much in Use at present; there are two Sorts of them, which the *French* distinguish * *à Manchons*, and *à Brides*, but the latter only are made use of, and are esteemed the best. Iron Pipes have all the good Qualities of those of Lead, last longer, and cost but a † fourth or fifth Part of the Price. They are made even to 18 Inches Diameter; each Pipe is three Foot and a half long; and at both Ends there are Stays, or Ears, which are joined and brought close together with Nuts and Screws, and between the Joints are put round Pieces of Leather and Mastick. In difficult Places, you put Rounds and Half-Circles of Lead; as also where there are Elbows, Cocks, and Suckers, you are obliged to make good the Intervals with Pipes of Lead.

* *The Pipes* à Manchons *run six Inches one into the other, and are jointed together with Mastick and Hemp, as the Earthen Pipes.*

Those à Brides *are fasten'd to each other by certain Ears or Stays, which are screwed together, with Leather between the Joint.*

† *This must be understood, partly with respect to the great Substance required in a Leaden-Pipe, more than in a Pipe of Iron of the same Diameter; partly with respect to the Difference of Weight between Lead and Iron, and partly with respect to the Price of Lead in* France, *where 'tis much dearer than in* England.

'TIS not sufficient that I have spoken of Reservers, and the different Ways of conveying Water: There is still a material Point behind that must not be forgot, which is the Proportion and Diameter the Conduits and Pipes ought to have, with respect to the Spouts you would have them cast. 'Tis on this the Beauty of your Water-works depends; for if

The French *Conduit-Makers call such small* Jets *or* Pissotiers, *Pissing-Streams.*

if the Pipes are too ſmall, or furniſh too many Baſons, without having their due Proportion, they will form nothing but a few feeble Spouts, and poorly ſupplied; beſides that theſe Pipes are ſubject to be eaſily choak'd up, and to burſt, becauſe the Wind is ſo confined in them, that it can ſcarcely get out.

To remedy all this, I ſhall ſhew you the moſt juſt Proportion that ought to be given to Conduit-Pipes, with reſpect to their Water-Spouts. To make a Spout play four or five Twelfths of an Inch thick, that is to ſay, whoſe Quill or Ferril is bored to that Diameter, which throws out an Inch and one ſeventh in Circumference, the Pipe ſhould be an Inch and a half in Diameter; for a Spout of ſix or ſeven Twelfths, the Pipe ought to be two Inches; for one of eight or nine Twelfths of an Inch, the Pipe ſhould be three Inches; and for a large Spout of an Inch Bore, the Pipe ſhould be four Inches Diameter. To play a Spout ſtill bigger, as of an Inch and quarter, or better, or what we call a Sheaf of Water, there muſt be a large Pipe of ſix Inches Diameter. I ſhall forbear ſaying any thing of Pipes that exceed ſix Inches, as thoſe made for the King's Works, which come up to a Foot or 18 Inches Diameter, and coſt ſuch vaſt Sums, that they ſeem to me above the Reach of the moſt wealthy private Gentleman.

IT may be taken for a general Rule, that the Bore of the Quill ought to be four Times leſs than the Bore or Diameter of the Conduit-Pipe; that is, they ſhould be in a Quadruple Proportion, that the Column of Water may be proportionable, and that the Quickneſs of the Motion in the Pipes may be equal; beſides which, there is too great a Friction and Wear in ſmall Pipes, when the Quill is too big; and in the Bore of ſmall Quills, when the Pipes are too large.

Mariotte's *Treatiſe of the Moving of Water, Part* 5. *Page* 340.

THERE are divers Sorts of Quills which throw the Water into Sheafs, Showers, Suns, Fans, and a great many other Forms, as you pleaſe; but the moſt common are made like a Cone, and have but one Hole for the Water to iſſue at: Theſe are the beſt too, not being ſo ſubject to ſtop, as the flat ones, which are pierced with many Holes or Slits made

made opposite one to the other, or else have several other small Quills solder'd on upon them.

Mariotte, *Part* 5. *Page* 336, *and* 337.

SOME pretend, that Spouts of Water play better when the Quills are pierced with a single Hole through a pretty thick Plate, than when they are raised in a Cone; because there is less Friction made, and less Resistance at the Mouth of it.

'TIS certain, that the bigger the Pipes are, the better the Water plays; and 'tis the Life of fine Water-works to be well fed, which should be by one continued Length of Pipe, all of a Size from the Reserver to the very Quill, without any Diminution; this furnishes more Water, and gives a greater Weight to the Spout, which without it appears choaked, and confined too much.

THERE are some of a quite contrary Opinion, who imagine, that in a Pipe of 100 Fathom long, the first 50 Fathom from the Reserver should be bigger than the last 50 to the Quill, which they pretend should be lessen'd about an Inch in Diameter; to the end, say they, that the Water may begin to be forced and contracted at somewhat more Distance in the Pipe, which ought always to go diminishing to the very issuing out of the Water: But this is a very wrong Notion in the Case of Fountains, for it is sufficient to contract and force the Water in the Trunk or Column of the Spout, and in the Quill, without diminishing the Size of the Pipe.

THERE is but one Case where the Diameter of the Water-Pipes ought to be diminish'd, which is, when they are of a very great Length, as three or four hundred Fathom; it is then convenient to lay three several Sizes of Pipe; for whereas without it, the Water in so great a Length would sleep as it were by the way, and lose much of its Strength; these different Sizes quicken it, and redouble its Force: For Example, in a great Conduit of 300 Fathom long, you should lay the first hundred Fathom with Pipe of eight Inches Diameter, the next 100 with six Inches, and the last with four Inches; but in Conduits of 100 or 150 Fathom, the same Diameter should be continued the whole Length to the very Quill.

WHEN

WHEN you have ſeveral Spouts to play in a Garden, as four or five for Example, it is no way neceſſary to lay five or ſix Pipes from the Reſerver, that is, as many Pipes as Spouts; this would be a needleſs Expence. You need lay no more than two or three Pipes, but of ſuch Proportion, that they be large enough to ſupply all your Spouts with Water, ſo that they may play all together without ſpoiling and lowering one another: For Example, to make three Water-Spouts play each half an Inch, or better, in Diameter, you muſt have a Pipe of ſix Inches over; for three Spouts of a third of an Inch each, the Pipe muſt be four Inches. The ſame Size of Pipe ſhould be continued till you are over-againſt the Baſons, or be diminiſhed proportionally by Branches: Thus, upon a main Pipe of ſix Inches, you may lay Pipes of two Inches Diameter for Branches, that the Water may be equally diſtributed by theſe Drains.

YOU ſhould obſerve, that at the Mouth of the Conduit-Pipe, that is, at the Out-let of the Reſerver, it ought to have two Inches more Diameter; as if it be a Four-inch Pipe, you ſhould give it a Waſher and Opening of ſix Inches at the Bottom of the Reſerver, that the Entrance being larger, it may ſerve as a Tunnel to evacuate the Water the ſooner, and give the greater Preſſure to the Spout.

THE Pipes being continued to the Baſons, Regard ſhould be had to fix a Cock there, of a Size agreeable to the Diameter of the Conduit-Pipe; taking care, that as much Water may paſs through the oval Hole of the Cock, and Boſs, as through the circular Hole of the Pipe: There are ſeveral ſorts of Cocks, as thoſe with a ſquare Head, with Branches, like the Head of a Crutch, and with two or three Vents for the Water.

A PRETTY large round Piece of Lead, like a Collar, ſhould be ſoldered round the Pipe, in place of the Clay-Bottom, and Solid of the Baſon, which it goes through, that the Water being ſtopt by this Plate, may not follow the Side of the Pipe, and ſo be loſt.

THE Pipes ought always to lie uncovered upon the Bottom of a Baſon, and never be buried within it, that they

may

may be the better mended when they happen to be at fault. To the Conduit-Pipe is ſoldered an upright Pipe, called a Socket, in the Center of the Baſon, which is the Place where the Spout ſhould be, and, at the End of this Socket is likewiſe ſoldered the Braſs-Nut, upon which the Quill is ſcrewed. At about two Foot below the Socket, the Pipe ſhould be cut off, and ſtopt with a Wooden Stopple with an Iron Ferril, or with a Braſs Stopple and Screw ſoldered on there. You may empty the Pipes when there is Filth in them, by taking out theſe Stopples.

IN Conduit-Pipes, all Elbows, Bendings, and right Angles, ſhould be avoided as much as poſſible, becauſe they diminiſh the Force of the Water: And when they cannot be carried directly ſtreight, but that a Turning muſt neceſſarily be, the Elbows ſhould be taken a little the farther, to leſſen the Quickneſs of them.

IN Conduits that are pretty long, Air-holes, or inverted Suckers, ſhould be made at convenient Diſtances, to relieve the Pipes, and let the Air out; and when, after a quick Declivity, the Pipes come to lie level again, you muſt, in that Place, ſolder on a Cock to reſiſt the Weight of Water, or the Pipe will not laſt long.

PIPES ſhould always lie two or three Foot deep in the Ground, becauſe of the Froſt, and for fear of Thieves, and ſhould be laid along the Walks, and never in the Woods and Parterres, *&c.* that you may ſooner diſcover their Faults, and more eaſily come at to mend them, without diſplanting any thing. When they run through Terraſſes, you ſhould make a little Vault the length of the Pipe, that you may view it from time to time.

CHAP.

Chap. X. and Last.

Of Fountains, Basons, and Cascades of Water; and the Manner of making them.

FOUNTAINS and Water-Works are the Life of a Garden; 'tis these make the principal Ornament of it, and which animate and invigorate it, and, if I may so say, give it new Life and Spirit. 'Tis certain, that a Garden, be it in other respects never so fine, if it want Water, appears dull and melancholy, and is deficient in one of its greatest Beauties.

THE Distribution of Water in a Garden, is one of the most difficult Points; it requires some Ingenuity and Industry, to order it so, that a little Quantity shall appear a great deal; and that not lavishing the Water away in Shell-Works, and little Basons, which are but Trifles, it be spared for necessary Places, where it may make a handsome Effect, in forming large and well-fed Spouts. It were to be wished too, that the Parts of a Garden were well executed, and the Walks pierced advantageously for the Water.

CARE should be taken in this Distribution, that the Fountains be disposed in such manner, that they may be seen almost all at a time, and that the Water-Spouts may range and aline one with another, which is the Beauty of them: This Repetition makes a Confusion very agreeable to the Eye, which supposes them to be more in Number than they really are.

WATER is distinguished divers ways, as natural and artificial, spouting and flat, living and stagnant.

NATURAL Water is that which issuing out of the Earth of itself, runs into a Reserver, and makes the Fountains play continually: Whereas the artificial is raised into a Reserver, by means of Hydraulick or Water-Engines, as I have already explained in the foregoing Chapter.

THAT is called spouting Water, which, rising into the Air in the middle of Basons, forms single Jets, * Sheafs, † Bubblings of Water, *&c.* to distinguish it from flat Water, which makes Canals, Pools, Fish-Ponds, and Basons of Water, without Spouts; which is no great Beauty in a Garden, because being always quiet, and in the same state, it does not animate a Garden, as spouting Water does, which seems to give it Life; and 'tis chiefly of these last, that we say there are fine Water-Works in such a Place.

* Gerbes d'Eau *are made by several little Spouts playing all together, which form a kind of Sheaf.*
† Boüillons d'Eau *are very low Spouts, that rise but little higher than a quick Spring.*

RUNNING Water is that which runs without Intermission; it is the finest of all for its Clearness; and its constant Motion renders it wholesome, and very pure: Of this Kind are the Waters of small Rivers and Brooks, of which are made * Canals and large Pieces of Water in Gardens: Of this Number are likewise reckoned such Fountains as run Day and Night.

* *As the Canal of* Chantilly, Berny, *&c.*

STAGNANT Water is the most disagreeable of all; it grows dirty, green, and all covered with Moss and Filth, having no Motion at all, as in Basons that seldom play, and in marshy Lakes and Ponds: They are also very subject to corrupt, and to stink, in the Summer.

THERE is no fixing any certain Places for Fountains and Basons, which look very well where-ever they are; if you could set them in every Part of your Garden, it were so much the better; but as they are a very considerable Expence, their Number should be regulated with great caution.

A BASON is usually set at the End, or in the Middle of a Parterre, fronting the Building; this is a Place where you should never fail to make one, as likewise in a Kitchen-Garden: But when you can have them in Groves, 'tis a double Satisfaction; Water there being, as it were, in its Center; besides, the Verdure of the Trees serves as a Ground to set it off, and improves the very Whiteness of the Water; the Purling and Murmur of it strike the Ear too the more agreeably,

agreeably, by the Stilness and Echo that reigns in the Woods.

FOUNTAINS should not be placed too near the Building, because, in the Summer, there rises off the Water Vapours so corrupt as may communicate a Malignity to the Air we breathe, which is very injurious to the Health; besides that they strike a very great Dampness to the Walls of the Building, enough to spoil the Paintings and Moveables within, and incommode you in the Night with the Croaking of Frogs and Toads, *&c.* These are the Reasons why Country-houses are not environed now-a-days with Motes of Water, as they were heretofore, and that the Ditches of several Castles are now laid dry.

FOR the Form and Figure of your Basons, you should follow those that are marked upon the Plan: There are Basons that are round, octangular, oblong, oval, square, *&c.* but commonly they are circular. When these Basons exceed a certain Size, they are called Pieces of Water, Canals, Mirrours, Fish-Ponds, Pools, and Reservers.

FOR the Size of Basons, I shall say in general, that you can hardly err in the Bigness; the larger they are, the better; but you may easily go wrong in making them too little, which is very ugly: These are two Extremes which should be avoided in their Proportion, as the making of a little Bason in a great deal of room, or devouring the best Part of a Spot of Ground with a great Water-Work. The just Proportion of this should be left to the Discretion of the Architect, or of him that is to give the Design of the Garden.

A GREAT many pretend, that the Size of a Bason should be proportioned to the Height of the *Jet d' Eau*, to the end, say they, that the Water thrown up into the Air, tho' tossed by the Wind, may not go beyond the Edge of the Bason, but all fall down again without wetting the Walk about it. In this they are mistaken; for let the Spout rise never so little height, tho' it be in a large Bason, the Wind shall always blow the Water away, and carry it a great Distance off: 'Tis an Experiment I have often made, and 'tis indisputable. I agree with them, that it is as disagreeable to see a * small slender Stream in a great Bason, as to see a very

* *As the little Spout of the great Bason at the* Palais Roial.

very thick and very high one in a little Baſon. There ſhould be, as much as poſſible, ſome Sort of Agreement between the Stream of the Spout, and the Baſon; but there is no determining any exact Proportion between the Size of Baſons, and that of their Spouts: This depends upon their Fall and Force of the Water, or upon the Place where the Ground will permit you to ſet your Fountains.

As to the Depth you ought to give Baſons, it is ordinarily from 15 to 18 Inches, or two Foot at moſt; this being ſufficient for dipping the Watering-Pots into it, and for ſecuring the Bottom of the Baſon in great Froſts. You never make them deeper, but when they are to ſerve for Reſervers, or when you would keep Fiſh in them, as is ſometimes done in great Baſons, Canals, and Ponds of Water: Then you give them four or five Foot Depth, which is enough to hold a great deal of Water in Store, for the Fiſh to breed in as they ought, and to carry a Boat, in caſe you have a Mind to put one into it, which you are obliged to do when there are Spouts in the Middle of a Piece of Water, to go and unſcrew the Ferril, or Quill, and to take out the Dirt that hinders the Water from doing its Office. Theſe ſmall Boats ſerve alſo to fiſh in, and go upon the Water, which is none of the leaſt Pleaſures of the Country.

You ſhould eſpecially obſerve, in Point of Depth, not to exceed four or five Foot, tho' it be a Canal or Reſerver, it being dangerous when 'tis more, as eight or ten Foot; ſo many Accidents have happen'd to Perſons, who going upon ſuch deep Baſons have fallen in and been drown'd, that in Truth it ought ſeriouſly to be reflected on, and all Endeavours uſed, that a Thing made for the Delight and Ornament of a Garden, may not in the end occaſion Vexation and Trouble.

To build a Baſon, the Dimenſions of it ſhould be very exactly taken, if you would make it good, and have it hold Water well*. You cannot be too circumſpect in this Work, the Water always naturally ſeeking to run away; and by its Weight and Preſſure in a Baſon, being ſubject to get out at the leaſt Cranny, which grows conſtantly bigger and bigger. If you fail of performing this Work well at firſt, 'tis very

* *The Conduit-makers ſay a Baſon ſhould hold Water like a Diſh.*

very difficult to repair it; for there are ſome Baſons have been worked upon ſeveral times, without being able almoſt to make them hold Water, for want of their being made well at firſt. This Work, beſides that it requires a great deal of Care, and experienc'd Workmen, demands alſo good Materials to be uſed in it, as ſhall be explained hereafter.

As the Octangular Baſon upon the Parterre of the Palais Roial.

BUT before I proceed to ſhew you how Baſons are made, it will be neceſſary to diſtinguiſh the ſeveral Kinds that are in Uſe. Of theſe there are three Sorts, Baſons that are made with Clay, with Ciment, and with Lead.

I SHALL begin with Baſons of Clay, as thoſe that are moſt in Uſe.

THE Place being traced out upon the Ground, you muſt, before you cauſe it to be dug, extend and enlarge the Outline of it four Foot farther, that is to ſay, make the Diameter four Foot bigger on each Side, which makes eight Foot in all. The Baſon will be never the bigger for this, becauſe the Addition of four Foot will be filled up and poſſeſſed by the Walls and Clay-work of the Circumference. You ſhould alſo obſerve, for the Bottom of the Baſon, to hollow the Ground out two Foot lower than the Depth you deſign to give it. The two Foot thus dug out, will be likewiſe filled by the Bed of Clay, which ought to be 18 Inches thick; and the other ſix Inches are for the Gravel and Paving which is laid upon the Clay. For Example; if you would make a Baſon of ſix Fathom Diameter, the Ground ſhould be open'd ſeven Fathom, and two Foot over; and if you would give two Foot Depth of Water, it ſhould be dug out four Foot. So the Baſon, when finiſh'd, will always come to the Size and Depth required, of ſix Fathom Diameter, and two Foot Cavity.

Some Fountain-makers allow but fifteen Inches Thickneſs of Clay at Bottom, though they give the Sides 18, which they do to ſave ſome of the great Quantity of Clay that the Bottom of a large Water-work takes up.

THE Ground ſhould be dug perpendicularly, and be carried away, as was taught above in the ſecond Chapter of this Part. The Digging being finiſhed, and the Earth cleared out, you muſt build two Walls, and incloſe the Clay betwixt them, that by this means the Water may not dilute it, that it may keep freſh, and that the Roots of the neighbouring Trees may not ſo eaſily penetrate it.

AGAINST

AGAINST the Earth raiſe or back up the Wall *A*, *Fig.* 1. following, of one Foot thick, from the Bottom of the Digging, to the Level of the Ground above, which you may build with Shards, Rubble, or Flints, no matter which; with Mortar made of the natural Earth. This Wall is called the Ground-Wall, becauſe it is built only to reſiſt the Preſſure of the Ground about it.

THE Wall being thus built all round the Work, cauſe the Clay to be brought in, which muſt be thrown into the Bottom, and made fit for working and handling, by flinging Water upon it from Time to Time, and ſuffering no Dirt to be in it. Your Clay being prepared, let it be ſpread and thrown about by Shovels-full, and afterwards kneaded by little and little with Mens naked Feet, or with Rammers to a Foot and a half high, and about four or five wide all round the Compaſs of the Wall; you ſpread the Clay four or five Foot wide, only to lay on the Floor and Joiſts, upon which the ſecond Wall *B*, is to be built, which the *French* call *Mur de* * *Douve*, it being no way neceſſary to ſpread the Clay at firſt over all the Bottom of the Baſon. Meaſure 18 Inches from the Wall *A*, and leaving this Interval for the Body of Clay *C*, the Wall *B* muſt be built within it, which ought likewiſe to be 18 Inches thick: And as this Wall cannot be built ſubſtantially, if it be founded only upon the Clay, there is a Neceſſity of making for it a Floor with Joiſts, which is done in this Manner. Take Pieces of Timber-Quarter of four Inches thick, or Ship-Plank of two or three Inches

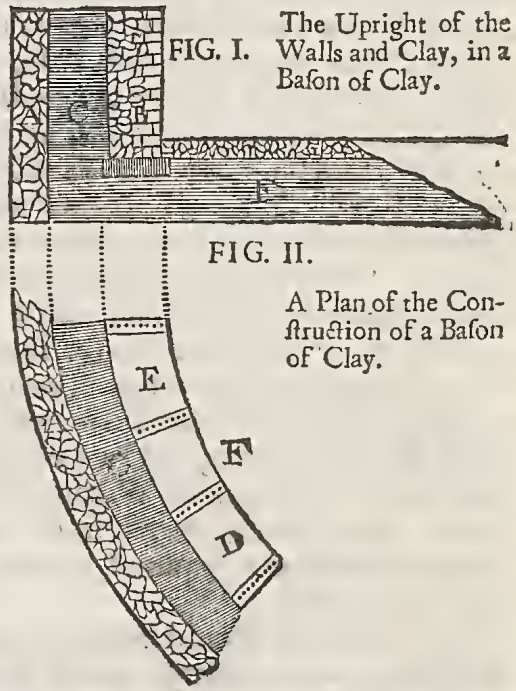


FIG. I. The Upright of the Walls and Clay, in a Baſon of Clay.

FIG. II. A Plan of the Conſtruction of a Baſon of Clay.

* Douve, *in* French, *ſignifies a Pipe-Stave; and this Wall ſurrounding the Water of a Baſon, as the Staves of a Veſſel do the Liquor contained in it, is therefore called by the* French Mur de Douve.

Inches thick, and ſix Inches broad, and bury them level with the Clay at every four Foot Diſtance, ſo that they may a little exceed the Surface of the Wall on both Sides: Theſe are called *Racinaux* by the *French*, and do the Office of Joiſts, as *D*, *Fig.* 2. after which, lay upon them long Pieces of Ship-Plank, which ſhould be as broad as the Wall, and nail or ſpike them down to the Joiſts; and this is what we call the Platform or Floor, *Fig.* 2. This Work being done, you ſet upon it the firſt Courſe of the Inner-Wall *B*, which muſt be raiſed as high as the other, and 18 Inches in Thickneſs at leaſt; for in Baſons that are pretty large and deep, where there is a great Weight of Water, you muſt make the Wall two Foot thick, which is a means to preſerve the Baſon, as well as the Wall itſelf.

YOU ſhould not raiſe the Inner-Wall above half its Height at firſt, as ſuppoſe it ought to have ſix Foot, you ſhould raiſe it but three Foot; becauſe it would be very difficult to throw in and tread the Clay to the Bottom of the Bed, if the Wall be raiſed its whole Height at once. The Space *C*, *Fig.* 1. contained between the two Walls, called, by the *French*, *le Corroi*, muſt be filled with Clay to the Top of the Wall, which ſhould be built level with the other; and the ſame Kneading and Treading muſt be continued, till the Body of Clay *C* be raiſed eaven with the Ground.

FOR working the Bottom *F*, *Fig.* 2. you are to fill the whole Extent of the Work with Clay, to make a Bed of 18 Inches Thickneſs, beginning to knead it with that you firſt ſpread within the Inner-Wall and Joiſts; and uniting that and the Bottom together, which ſhould be cover'd with Gravel five or ſix Inches deep, as you ſee in *G*, *Fig.* 1. which will preſerve the Clay, and hinder the Fiſh from digging. Inſtead of graveling it, you may pave the Bottom; but this is vaſtly chargeable.

IF the Baſon be in a Wood, or near any great Trees, the Ground-Wall muſt be built with Mortar made of Lime and Sand, to ſtop the Roots of the Trees, which coveting the Freſhneſs of the Clay to nouriſh them, and gathering more and more Strength, in the end overturn the Walls into the Water. You muſt likewiſe, for the Preſervation of your

Baſons,

Basons, every five or six Years, cause Trenches to be made as deep as the Clay-Bottom, about the Walls, and in the Middle of the Walk, not going too near the Bason, or the Palisade, for fear of hurting them; and cut off all the Roots that may have reached the Bed of Clay.

To build the Inner-Wall, you should pick out good Rubble-Stones, that will not scale and come off in Flakes in the Water, or else get Flints and Stones from the Hills, which make very durable Work, but look not so neat as the Pointed Rubble. You should lay here and there Stones that reach the whole Thickness of the Wall, that is to say, such as make the Surface on both Sides, which Workmen call *Making a Parpin*: This stiffens the Wall, and renders it more substantial. The Mortar that should be used in the Construction of this Wall, is made of Sand tempered and beat up with Lime; the Proportion of which is one Third of Lime, and two Thirds of Sand, which makes very good Mortar.

It may be asked, perhaps, why the Inner-Wall *B* does not go to the Bottom, as the Ground-Wall *A* does. The Reason is this: If this Wall were set upon the Ground, as the other Wall is, the Water would be lost, and the Work behind it become useless, because the Bottom Bed *F* could not be united to that of *C* upon the Sides, and so the Clay would not make one entire Body, which is the great Business of all, and that which keeps in the Water at the Corner of the Wall. 'Tis for this Reason you are obliged to build and secure this

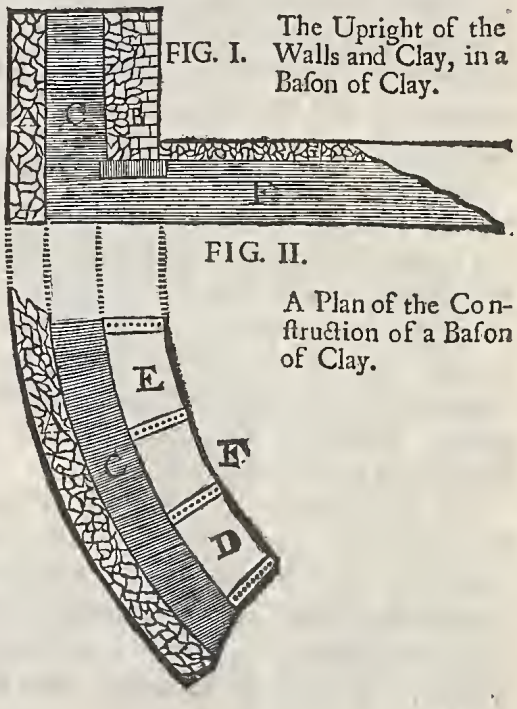


FIG. I. The Upright of the Walls and Clay, in a Bason of Clay.

FIG. II. A Plan of the Construction of a Bason of Clay.

Wall

Wall upon Joists and Planks bedded upon the Clay, that a Communication may be left between the Bottom and the Sides.

THE true Sign of good Clay is, that it be close and firm, and not sandy, that it draw out in Strings upon breaking, and that it seem fat in handling. 'Tis no Matter whether it be red or greenish, the Colour signifies nothing: It is bought by the Cubical Fathom, which contains in all 216 solid Feet. The Cubical Fathom ought to have a square Fathom upon every Side, which makes 36 Foot on the Superficies. Clay is not dear, unless in the Carriage and Transporting of it: In some Countries it costs nothing but the Drawing, there is such Plenty of it; in others it must be fetched from far, which is a great Charge.

BASONS of Ciment are built in a Manner very different from the foregoing; the Out-Line of the Bason is to be extended, and the Diameter enlarged, but not so considerably as in the Basons of Clay; there needs no more in these, than one Foot nine Inches of Work in the Circumference, and as much at the Bottom, which is sufficient to hold the Water. Thus, for a Bason of six Fathom Diameter, the Digging must be six Fathom three Foot and a half, and must be hollowed out one Foot nine Inches lower than the Depth you would give the Bason.

BEGIN with raising and backing up against the Ground, cut perpendicularly, the Wall of Masonry *A*, *Fig.* 3. of a Foot Thickness, which must go to the Bottom, and should be built with Shards and Rubble-Stones laid in a Mortar of Lime and Sand. This Wall being made all round, you begin the Filling in of the Bottom *B* a Foot thick, and work it with the same Materials and Mortar, as the Wall *A*. You then back up, against this Wall, the solid Work or Lining of Ciment *C*, nine

The Construction of a Bason of Ciment.

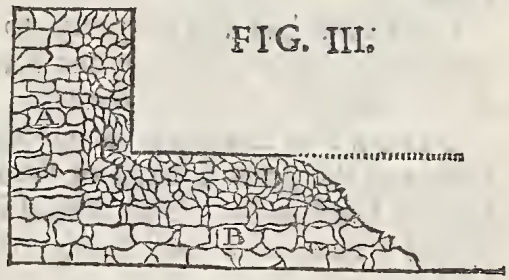


FIG. III.

Inches thick, including the Plaiſtering, and inner Surface. This Solid ſhould be made of ſmall Flints taken out of Vineyards, and laid in Beds, with Mortar made of Lime and * Ciment, which you muſt not be ſparing in, for this is that which makes the Work good. Theſe Flints ſhould not lie ſo as to touch one another; on the contrary, they ought to be at a little diſtance, and † ſwim in Mortar on all ſides.

** Ciment is powdered Tile or Brick-duſt.*

† The Fountain-makers call it laying Flints in a Pudding of Ciment.

WHEN this Solid is about eight Inches thick, and is continued over the whole Surface of the Bottom *D*, it muſt all be plaiſtered over with the fineſt Mortar, that is to ſay, with Ciment well ſifted, before it be tempered with the Lime; which Plaiſtering ſhould be wrought ſmooth with the Trowel. This Work requires great Attendance, to take out the Straws and Filth which may be met with in making the Mortar; the Proportion of which is two Thirds of Ciment, or powdered Tile, to one Third of Lime. In making this Mortar, a great Quantity of Water ſhould not be thrown upon it, for fear of waſhing away the Goodneſs of the Lime; but it ought to be made up by Strength of Arms, and good Beating.

YOU ſhould chooſe a warm, dry Seaſon, for working Baſons of Ciment, the Rain being very contrary to it. When the Baſon is finiſhed, you muſt, for four or five days together, anoint the Plaiſtering over with Oil, or Bullocks-Blood, for fear it crack and flaw; after which, you ſhould let the Water into it as ſoon as poſſible, for fear of the drying Winds.

CIMENT has the Property to harden ſo under Water, that Stone and Marble are not harder; for it makes a Body ſo ſolid that it never decays.

BASONS of Lead are ſomewhat more rarely in uſe, by reaſon of the great Charge of them, and the Danger of having the Lead ſtole. The Out-Line of theſe muſt be enlarged a Foot of a ſide only, and the Opening ſhould be hollowed out half a Foot more than the Depth you would give the Baſon: For Example, a Baſon of ſix Fathom diameter ſhould be dug ſix Fathom and two Foot over, and a

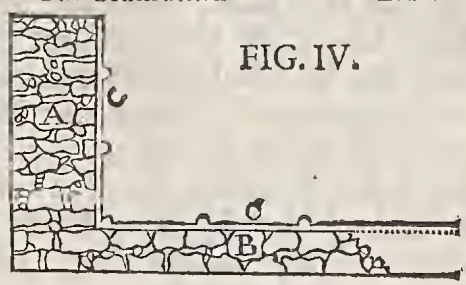
Foot

Foot and a half deep, if you design it one Foot deep in Water.

YOU allow a Foot Thickness to the Side-Wall *A*, *Fig.* 4. that it may better resist the Earth, tho' you give but half a Foot Thickness to the Area, or Bottom. These Walls should be built with Rubble laid in Mortar, all of Plaister, because Lime eats the Lead, and upon the Walls and Bottom you fasten the Sheets of Lead *CC*, which should be seamed one to another with Solder.

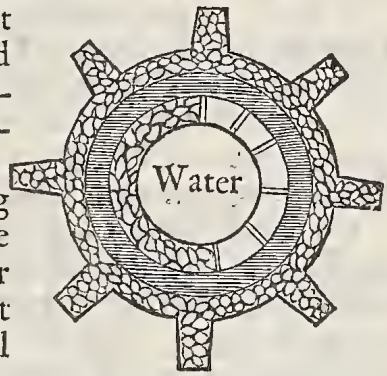
The Construction of a Bason of Lead.

FIG. IV.



WHEN you make a Bason upon loose Earth, or that which is lately brought in, the Ground-Wall should be supported, at every six Foot, with Buttresses, or Spurs of Masonry; the Foot of which should be as broad at Bottom as the Buttress is high, *as you see in this 5th Fig.* Without this Precaution, 'tis to be feared, the Bason may be entirely thrown down. If the Bottom be not good, you must drive Piles, and make use of Planks and Net-works of Timber, to lay the Platform of the Bason upon.

FIG. V.



YOU must observe, in making the Floor of the Bason, there should be left a small Fall, or Slope, to one side, for a Current to carry off the Water from all Parts, to empty the Bason entirely, and to cleanse it when you please, which is done by means of a Washer, and a Waste-Pipe at the Bottom of it.

AS to the Upper-Edge, and Superficies of a Bason, it should be kept very level, that the Water may cover all the Walls equally, and that it may always keep full; which is the great Beauty of a Piece of Water, and of great impor-

tance to preserve the several Basons I have been speaking of: For, if in a Bason of Clay the Water be not high enough, the Body of Clay that compasses it will dry and chap, and the Water will be lost; for which Reason likewise it is, that all round, upon the Walls and Clay-work, you lay a Border of Grass of the same Breadth, that the Sun may not so easily attract and draw away the Moisture. If it be a Bason of Ciment, the Plaistering of the Sides will be liable to be spoiled by the Frost, and to peel off; if it be a leaden Bason, the Sun will be apt to blister it, and open the soldered Joints; for Lead is hurt more by the Heat than by Frost, and the Water will then be lost, which is no easy thing to remedy.

FOR the Waste-Pipes of Basons, whether at Bottom, or upon the Superficies, you should observe to make them rather large than small, being very subject to be choaked, notwithstanding the Cawls that are put before them. This Waste-Water is carried away in Drains, or Earthen-Pipes, when 'tis only to be lost in Sinks and Common-Shores; but when it serves to play the Basons that lie below, you must then make use of the ordinary Leaden-Pipes.

THESE large Discharges, besides that they serve to keep the Walk about a Bason dry and in good Order, are also very necessary to the Preservation of a Bason: For when the Water runs over at any time, it dilutes the firm Ground upon which the Area and Foundations of the Bason are set, and spoils the Level of it.

OF the three ways of making Basons, which I have been speaking of, that which costs least is doubtless the Clay, to which you must have recourse in great Water-works, for saving Expence. But it is that too, which requires most looking after of all, being very subject to dry and chap, which will oblige you to run it over again from time to time: That which costs most, is the Bason of Lead, because of its Weight and Solder; and the third, which is that of Ciment, is preferable to all for its Duration, and may be said to keep a Medium, as to the Charge between a Bason of Clay and one of Lead: There is nothing but the Plaistering of them can ever be spoiled; this is so true, that I have

have had Basons of Ciment fitted up again, which had laid 10 or 12 Years without Water, and made very good, by pecking it off to the quick, and plaistering it over anew.

YOU may farther observe, not to employ Clay unless in moist Places; it keeps much better there than in dry Countries, and you have not the Trouble of doing it over again from time to time. Ciment is most proper in dry and barren Ground, and where Clay is scarce, because it naturally loves Drought and Heat. As for Lead, you may employ it any where, but with as much good Husbandry as possible: It is more made use of for Pipes than for Basons, unless it be in small Basons upon Terrasses, in Cascades, and other Places where you would not dig deep, for fear of killing your fine Trees.

THERE are some Countries where there needs neither Clay nor Ciment to make Basons, the Earth holding the Water naturally. This is a kind of free Earth, which needs no more than to be tempered, and filled into a Trench of three Foot broad, after having lined it, upon the side next the Water, with a Wall of Masonry of two Foot thick, to keep up this Earth, which does the Office of the inner Wall in the Basons before mentioned.

IN *Languedoc* and *Provence*, they make use of a kind of Earth called *Porzolana*, which has the Property of growing hard under Water, and is extremely durable; 'tis with this Earth they make their Basons: They mix it with Lime, and use it as Ciment, with which it may properly be compared, making, in a manner, the same Mortar.

Vitruvius *speaks of this Earth*, lib. 2. cap. 6.

IN Places where there is much Water, and a great Fall of Ground, you may, besides Basons, and large Pieces of Water, contrive also Cascades, * Gullets, and † Buffets of Water, *&c.* as well in the Walks, as on the Stairs and Flights of Steps: Nothing is more agreeable and convenient; for the Basons above supply them below, and are made to

* Goulettes *are small Channels cut in Stone, or Marble, laid sloping for the Water to run in, which is now and then interrupted by little Basons, cut in form of Shells, which throw up small Spouts of Water.*

† Buffet d' Eau *is commonly a Marble Table in a Garden; over which are several Shelves raised pyramidally, set out with Vessels of gilt Brass, about which the Water falls, and makes them look like Crystal garnished with Vermilion.*

play

play one from the other by the waste Water, either from the Water or Superficies.

CASCADES are composed of Sheets, Buffets, Masks, Bubblings, * Mushrooms, Sheafs, Spouts, Surges, † Candlesticks, ** Grills, †† Tapers, Crosses, and vaulted Arches of Water.

* *Mushrooms are a sort of inverted Bowl-dishes, cut with Scales on the upper Part, over which the Water falls into the Bason below.*

† *Candlesticks of Water are generally where the Spout is raised upon a Foot, as that of a great Ballu-ster, carrying a little Bason upon the Head of it, out of which the Water falls into another larger Bason. Sometimes they are no more than several small Spouts, rising in little square or round Basons, as in* Fig. II. Plate L.

** *Grills of Water are several Spouts in the same Line, standing in a long Bason very near one another.*

†† *Tapers are the same as Grills, but more distant one from the other.*

THEY are accompanied with Maritime Ornaments, and such as are suitable to the Water, as artificial Ice, and Rock-Works, Congelations, Petrifyings, and Shell-Works, Water-Leaves, Bulrushes and Reeds imitating the natural, with which the Surface of the Walls and Borders of the Basons are lined. They are likewise adorned with Figures that naturally belong to the Water, as Rivers, Naiades, or Water-Nymphs, Tritons, Serpents, Sea-horses, Dragons, Dolphins, Griffins, and Frogs, which are made to throw out, and vomit Streams and Torrents of Water. This is the greatest Part of what enters into their Composition.

AS to their Situation, and their Difference; Cascades can scarce have other than that of a gentle sloping Descent, or a Fall by Steps and Stairs of Stone, or Banks and Slopes of Turf. These great Cascades are all distinguished from the little ones, which are practised either in Niches of Horn-beam, or of Lattice-work, or in the Middle of an Ascent of Steps, or, lastly, at the Head of a Piece of Water; as may be seen in the Examples of the following Plate, which I am now going to explain.

THE first Figure represents a Cascade as plain as can be, and one of the most easy to execute in a private Gentleman's Seat. It is supposed to be upon a gentle Slope, at the End of a Wood cut into a Goose-Foot, the Walks of which center upon a round Bason, where there is one large Spout; and

and to furnish the more Water to the Head of this Cascade, you have waste Waters from Basons above, that throw themselves with open Mouth into this very Bason. The Head of this Cascade is between two Descents of Stone-Steps, adorn'd with four Figures, and it is formed by three Mask-Heads that vomit the Water into Shells, from whence it falls by Sheets into the Bason, being accompanied by two large Spouts on the Sides. In the Breadth of this Bason, and of that below, is made a Bed of Turf, edged with two Walks, in which are laid Chevrons, or Checks of Grass in *Zig-Zac*, to throw off the Torrents of both Sides. These Walks are planted with Horse-Chesnuts, and Yews between them; and behind the little Counter-walk, the Wood is continued to inclose the Cascade, and make a Ground of Verdure to it. The Water runs from this Head and upper Bason through a * Gutter, and comes into a second Bason, where it makes a Sheet: There are two little Basons above with † low Spouts, which throw Sheets also into this Bason. The Water, after this, runs through another Gutter, at the End of which is a small Bason with a little Spout, which advances forward, and makes a Sheet into another Bason below it. The rest of this Cascade is a Repetition of the same Thing down to the great Bason at the lower End, which receives all this Water, and is adorned with two large Spouts, besides the three little ones above, which fall Sheet upon Sheet into this Bason. In the Palisade are two Figures set to accompany this Fall of Water.

* Rigole.

† Boüillons.

FIG. II.

THE second Figure is much more magnificent and composed; it is laid out upon an easy Descent, cut with Steps, Half-Paces, Rests, and small Slopes of Turf. Its Head is a great Octangular Bason, out of which rises a large* Mushroom of Water, making a Sheet into the Bason; and the Cup or Bowl of it is sustained by Dolphins that spout Water out. There are likewise four Bubbling-Spouts regularly placed in this Bason, the Water of which is all discharged by a Sheet upheld by Tritons, and Dolphins, that adorn the Head of this Cascade. This Water afterwards finds certain Rests, or Half-Paces in Basons, and continues its Fall by several other Sheets down to the great one at Bottom,

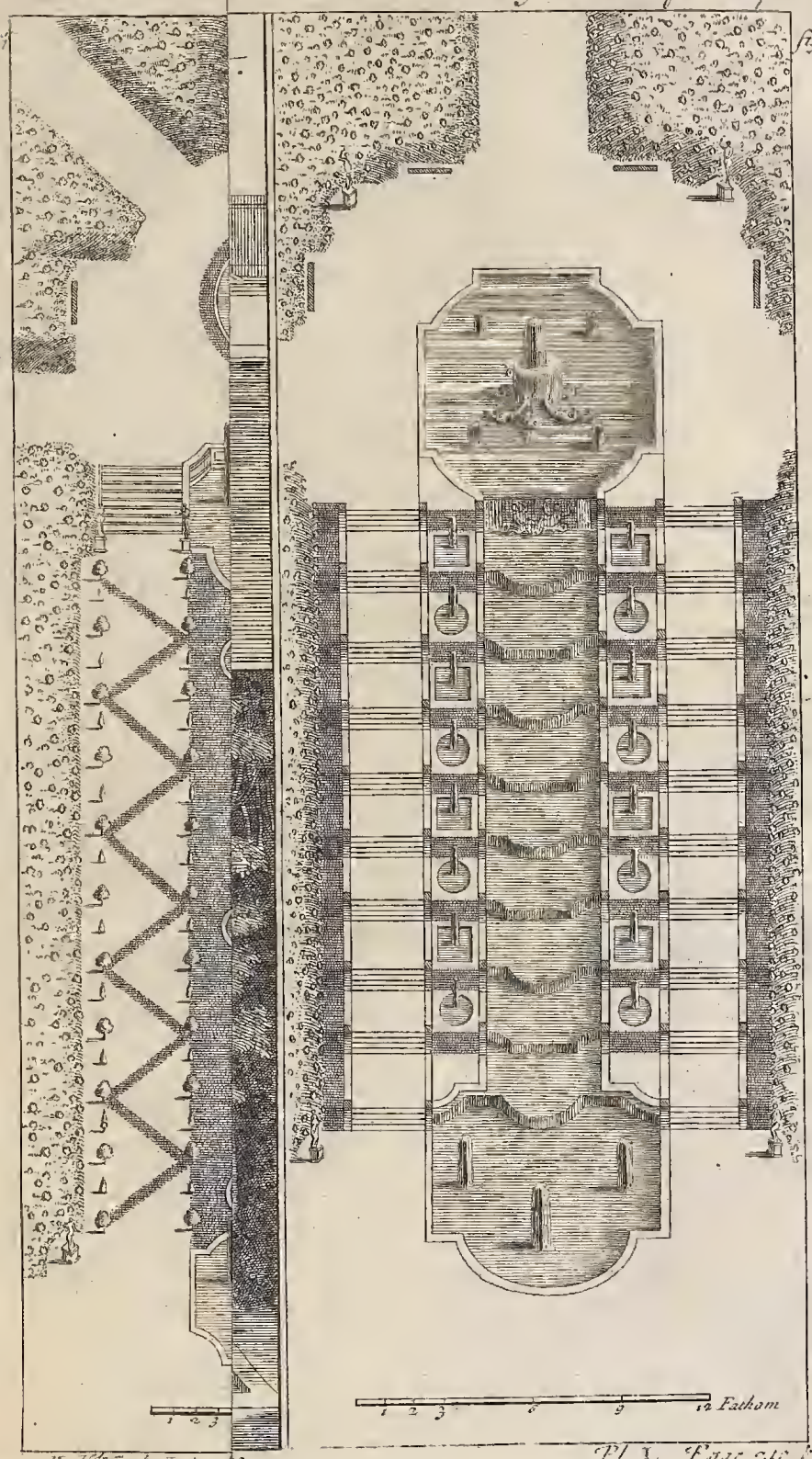
* Champignon, *which see explained above.*

tom, which is of the ſame Breadth as the upper Baſon, and receives all the Water: In it are three large Jets, two of which anſwer the Row of Spouts or Candleſticks upon the Sides, and the other is in the Middle. As theſe Sheets and Baſons would look too flat and naked without Spouts, the Sides of this Caſcade are accompanied by two Rows of ſmall Baſons, called † *Candleſticks*, which are made upon each Half-Pace. Theſe Spouts do not quite fill the Baſons, but in the Middle is a Cawl, and a Waſte-Pipe, to ſupply the others; that is to ſay, the firſt ſupplies the third, the ſecond the fourth, and ſo of the others; for in furniſhing the two firſt Spouts of each Row, you may make a hundred of them play all at once. There are little Banks of Graſs between theſe Baſons, which lie juſt againſt the Steps; and thoſe which are marked with a little black Square upon the Stone Coping, are Plinths to ſet Vaſes and Flower-Pots on, of which there are three Rows on each Side: Next the Paliſade is a Slope of Turf continued from Top to Bottom, which is cut where it comes againſt the Steps. This Caſcade is ſituated as the other, in the midſt of a Wood, for 'tis there they are moſt commonly made: The Verdure of the Trees and Graſs, the Brightneſs of the Water, and the Ornament of the Figures and Vaſes, making a Medley and Contrariety extremely agreeable to the Eye.

† Chandeliers, *which ſee explained above.*

FIG. III. THE third Figure contains a great Buffet, proper to be ſet at the Head of a Water-work, the upper Side of which lies againſt a low Terraſs-Wall. You may judge by the Upright, of the handſome Effect this Caſcade would make; and, by the Plan, of the Room it takes up. In the level Baſon above, which is the firſt Bed, there are five great Spouts of about 12 Foot high. This Baſon advances in Form of an oblong Square hollowed out at the Corners, and the Water of theſe Spouts makes Sheets on the Fore-Part, which are interrupted by little Rocks ſet againſt the Intervals of the Spouts. The hollow Corners are likewiſe ſet with Rocks, and upon the Sides are two Sheets of Water. Theſe Rocks are ſet here only to make a Contrariety, and to ſerve for a Ground to ten low Spouts that are in the ſecond Baſon, or Bed of Water, which differs ſufficiently from

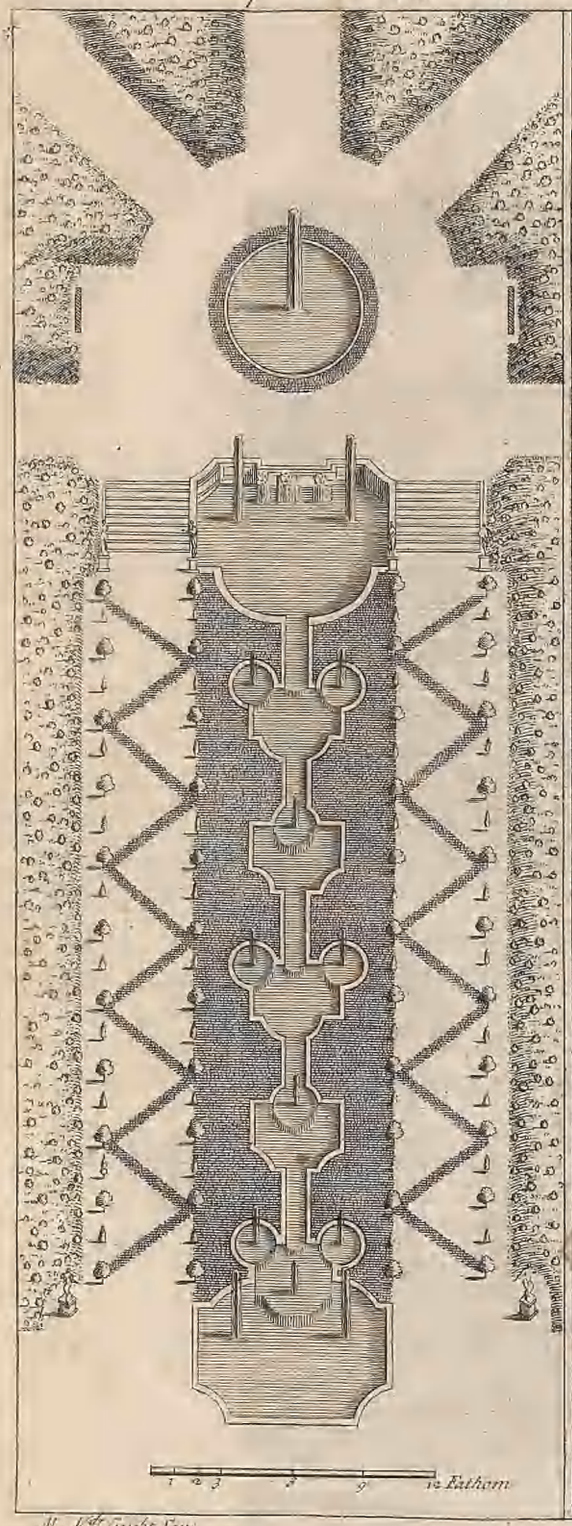
A Cascade. A Cascade by Falls of Steps.



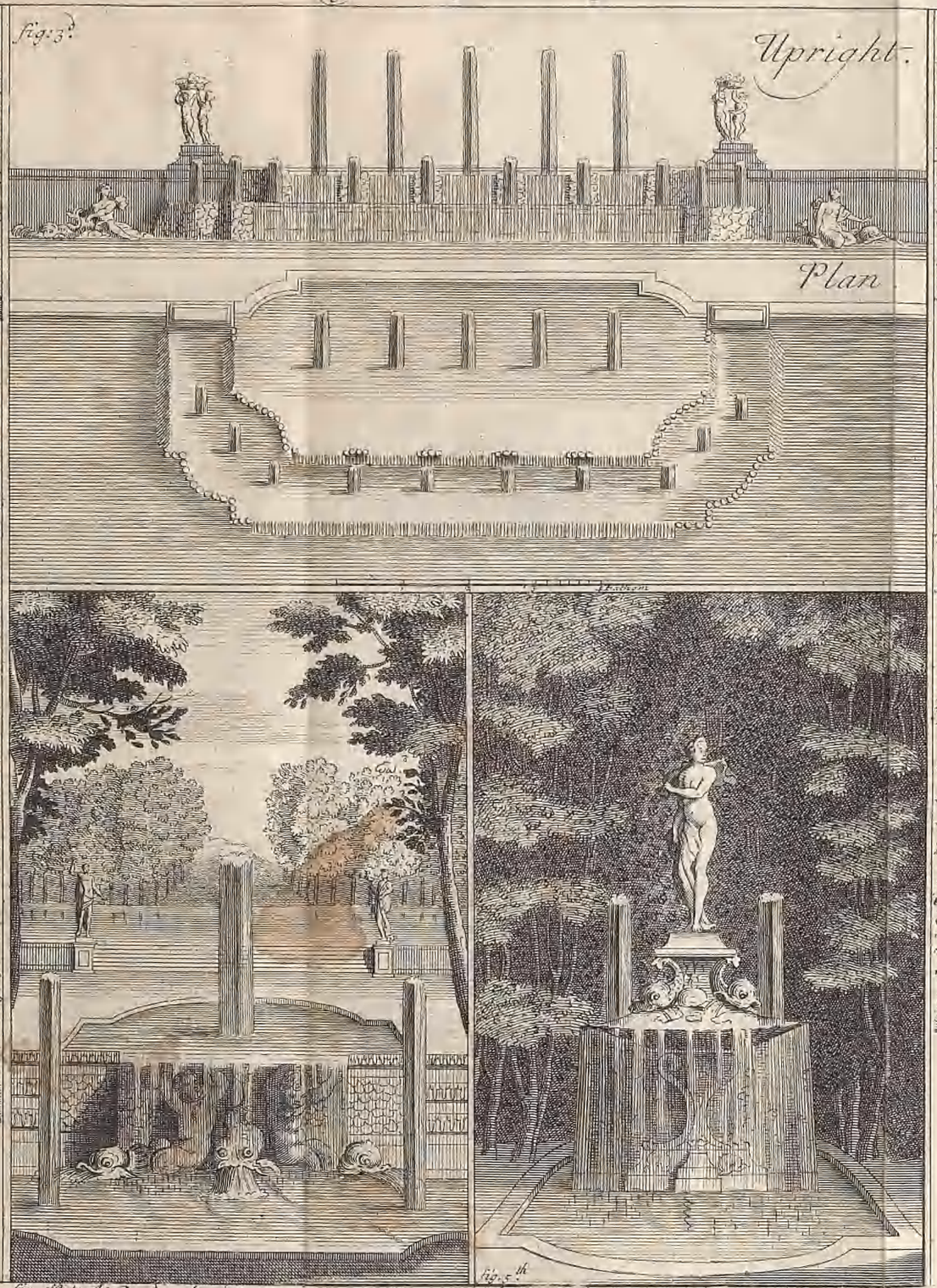
M. Vdr Gucht Sculp.

Pl. X. Page 210 Lon.

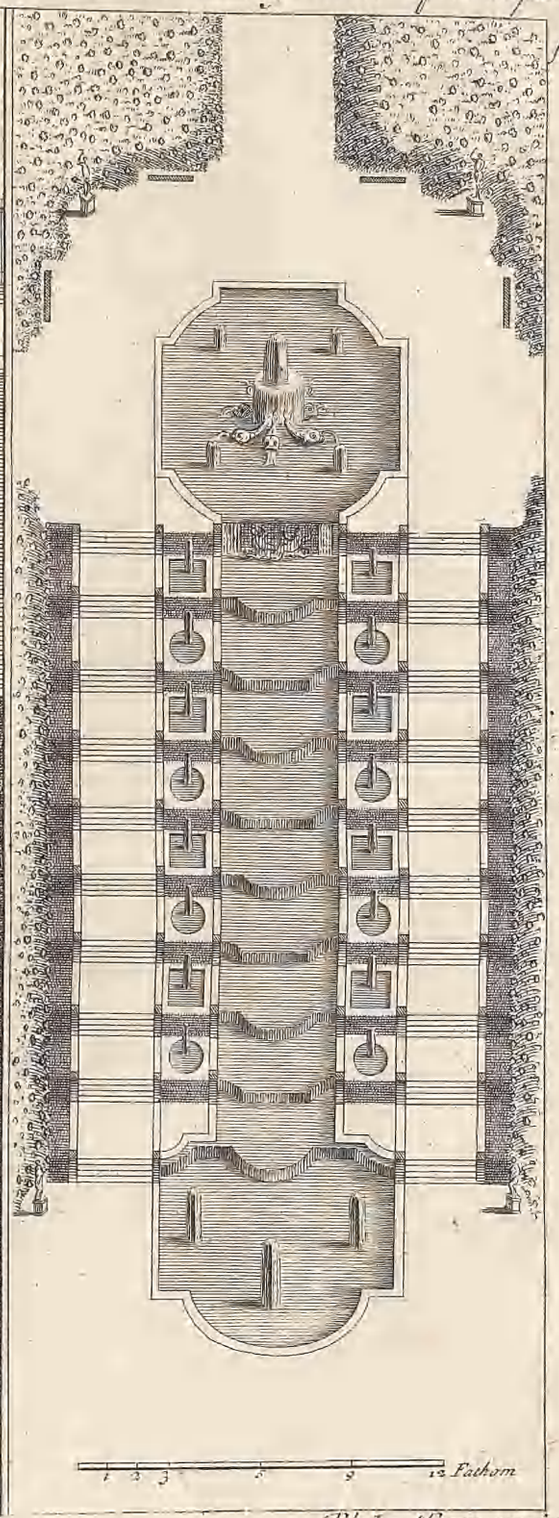
A Cascade upon an easy Descent



A Cascade in Buffet at ye head of a Water-Work.



A Cascade by Falls of Steps.



M. Vdr Gucht Sculp.

fig. 4th A Cascade upon a Terrass. A Cascade in a Niche of Hoin-beam.

from the former. The Sheet in Front is continued from End to End, and throws itself into the Water-work. There are also two pretty large Sheets upon the Sides, and no Rocks but at the Corners. This Buffet is adorned above with two Groups of Boys holding up Baskets of Flowers, which stand upon Bases set upon the Coping of the Terrass: At Bottom are two Figures of Water-Nymphs carried by Dolphins, which spout Water out at their Nostrils.

IN the fourth Figure you have the Elevation of a small Buffet, or Cascade of Water, contrived in the Middle of a Descent of Steps, Horse-shoo-Fashion. Upon the Flat of the Terrass is a Bason rounded at the End, with a large Spout or Sheaf of Water, which faces another Flight of Steps above, and a great Walk in a Wood, the Length of which is a Canal that supplies the Cascade with Water. This great Spout falls again into the Bason below, by a Sheet sustained by two young Tritons, and three Dolphins, that slabber into the same Bason. This Cascade is accompanied by two Spouts upon the Sides: The Walls of the Terrass, and of the Horse-shoo, are adorned with Pannels, Courses of Rock-work, Icicles, and Petrifications cut in Stone. FIG. IV.

THE fifth Figure is fit to be set at the Bottom of a Walk, or at the End of some long Line, and is made in a Niche or Sinking of a Palisade: 'Tis a great Shell raised at the End of a Bason, and sustained by Scrolls and Water-Leaves; in the Middle is a Figure of *Venus*, upon a Base wrought with a large Hollow, borne by two Dolphins, which throw out Water. There are two Bubbling-Spouts upon the Sides of this Shell, from which the Water falls again by Sheets into the Bason below. FIG. V.

THE Basons of these Cascades may be made with Clay, or Ciment, with a Coping of wrought Stone going round them; and for the little Basons of the Candlesticks, they may be cut and hollowed out of one Stone: The Gutters and narrow Channels may be also sunk in Stone, or built with Flints, and Mortar of Ciment. You may likewise make all these Basons and Gutters with Lead, but that costs a great deal, and is very liable to be stolen.

As to the Sheets of Water, they ſhould be ſupported by well-built Walls; and that they may make a good Effect, and not tear in Pieces, they ſhould be made to run upon Sheets of Lead, or upon Beds of Stone wrought very ſmooth, and ſet very level. The Figures wherewith you adorn your Caſcades, may be of Marble, Braſs, or Lead gilt or painted of the Colour of Braſs, or, at leaſt, of very hard Stone; but for Works that ſtand in the Water, you cannot employ Materials that are too good.

The End of the Second and Laſt Part.

Instructions to the BINDER *for placing the* FIGURES.

First Part.

THE four large Plates marked *A*, are immediately to succeed one another, as they are numbered, and are to be placed between the *Pages* 30 and 31.

The six Plates of Parterres marked *B*, are to be placed in like manner as they are numbered, between the *Pages* 38 and 39.

The ten Plates of Groves marked *C*, must likewise keep the Order of their Numbers, between the *Pages* 60 and 61.

The Plate of Bowling-Greens marked *D*, must be put between the *Pages* 62 and 63.

The Plate of Arbor-Work marked *E*, is to come between the *Pages* 74 and 75.

Second Part.

THE four Plates of the Practice of Geometry marked *F*, must be folded so, as to lie without the Book when open, and are to keep the Course of their Numbers between the *Pages* 102 and 103.

The

The Plate of Terraſſes marked *G*, ſhould be folded as the foregoing, and be ſet between the *Pages* 122 and 123.

The two Plates of Stairs marked *H*, are to ſucceed each other as they are numbered, between the *Pages* 126 and 127.

The Plate marked *I*, muſt alſo fold without the Book, and be placed between the *Pages* 132 and 133.

The Plate *K*, is likewiſe to fold without the Book, between the *Pages* 138 and 139.

The Plate of Caſcades marked *L*, ſhould be placed between the *Pages* 216 and 217.

First & last signatures washed & deacidified with calcium hydroxide. Resewed with unbleached linen hinges, all rag end paper signatures & hand sewed headbands. Rebound in full calf.

Sky Meadow Bindery
April 1985